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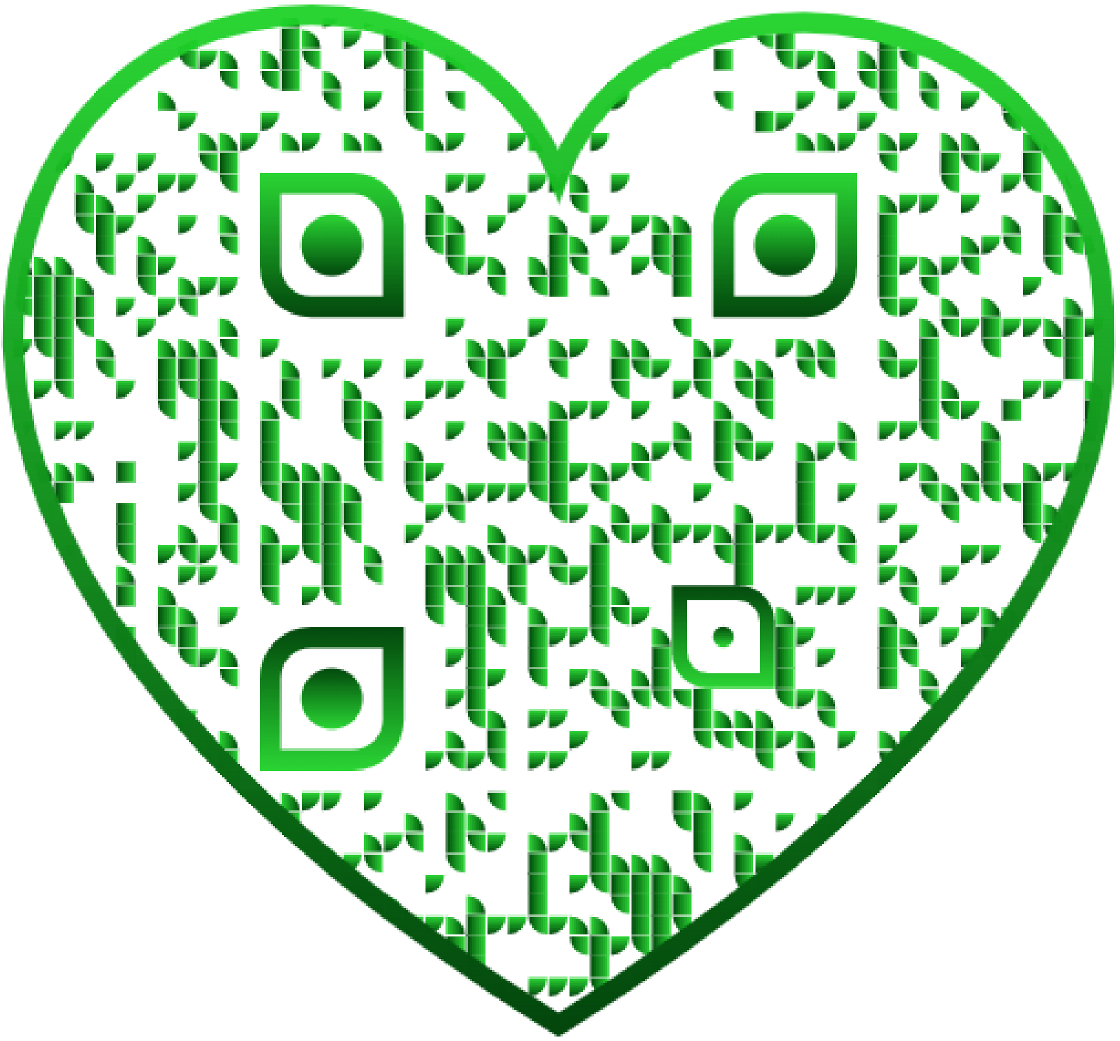


Backwoods
Survival Guide®

PRACTICAL ADVICE FOR THE SIMPLE LIFE

CONTENTS

OUTDOORS

8 Survival Fishing
With a few different approaches to try, landing dinner can be easy if there's a river or lake nearby.

14 Hide & Seek
Proper camouflage involves a lot more than just green and brown face paint.

20 Nature Has Teeth
Learn what to do if you end up getting bitten by a critter when you're in the field.

26 Eating Weeds
Perk up your diet, at home or in the forest, with these easy-to-spot wild edibles.

08
UMPQUA
Bug Floss

HOMESTEADING

34 Use the Entire Bird
Carving the turkey for a big feast is only be the beginning of all you can do.

40 It's Not Just for Laundry
Borax has a ton of uses that go well beyond the washing machine.

46 Going Sour
Making sourdough is a great self-reliance skill, and it isn't as hard as you think.

DIY PROJECTS

54 Walking Sticks
Make your own hiking staves and customize them to suit your needs.

60 Trash to Treasure
Upcycling is a great way to get creative and even make a few bucks.

66 Authentic Hand-Made Ax Handle
This is a very rewarding—though intensive—project.

72 Don't Toss Them Out!
You may be surprised at the ways you can use eggshells around the house.

78 Staining on Purpose
Make natural dyes you can use for all sorts of fun and artistic effects.

GEAR AND EQUIPMENT

86 New Products
The latest and greatest gadgets, gizmos and more from our favorite companies.

90 More Than Just Cover
Tarps should absolutely be part of your gear stash, and here's why.

96 H2O Haulers
Water is a critical survival need, and you should have ways to bring it with you.

102 Trail Hackers
Don't let brush and brambles get in your way as you're bushwacking.

108 Culinary Adventuring
This cutlery set from L.T. Wright is perfect for car camping, overlanding and more.

For submission information or other editorial queries, please email Jim Cobb at jim@survivalweekly.com. We're always looking for new products to feature in our magazines.

Letter From the Editor

Welcome to *Backwoods Survival Guide 34*! Summer is upon us. We here at *BSG* hope you're enjoying the season and getting outdoors as often as possible. Be smart about it, and make sure you stay hydrated. Maybe bring along one of the water carriers we're featuring in the Buyer's Guide that begins on page 96.

Speaking of articles in this issue, Kevin Estela shows us a few different ways to catch our limit next time we're near the water. Angeline Hawkes talks about how to make the best use of a turkey or chicken once dinner is over. Reuben Bolieu has a great review of a cutlery set from L.T. Wright Handcrafted Knives. And Craig Caudill isn't just our cover model this time around. He has a couple of articles here, including a great one on understanding basic camouflage principles.

As always, all of our articles are focused on increasing your self-reliance and helping you thrive no matter where you are. Welcome to the backwoods!

JIM COBB

The advice given in this magazine is the opinion of the author of each article based on their personal experiences and knowledge. The right response to a disaster may not be the same in all situations. Articles are for informational purposes only. The publisher accepts no responsibility for injuries or liability arising from relying upon information contained herein. In the event of an emergency, follow the advice of first responders and trained professionals. Have a preparedness plan researched from multiple sources and avoid high-risk situations. Follow all applicable federal, state and local laws for firearm ownership, carry and usage.

CHAPTER 1

OUTDOORS

HEAD OUT THERE AND HAVE FUN EXPLORING MOTHER NATURE.

MANY TIMES, CATCHING FISH IS FAR EASIER THAN HUNTING OR TRAPPING GAME!

Food abounds in most freshwater lakes and rivers, if you know how to obtain it.

SURVIVAL FISHING

Three different options to consider

BY KEVIN ESTELA

FISH ARE AN EXCELLENT SOURCE OF PROTEIN, AND SINCE THE MAJORITY OF THE EARTH S SURFACE IS WATER, THERE'S A GOOD CHANCE YOUR NEXT MEAL IS OUT THERE. MOST BODIES OF WATER CONTAIN SOME SORT OF FISH– AND ALL FRESHWATER FISH FOUND IN THE CONTINENTAL U.S. ARE SAFE TO EAT.

In a survival scenario, if you have access to water, you are likely to put food on the table with some basic fishing equipment and some skills. While a traditional rod and reel or a long net would be optimal for catching fish, space may be at a premium in your survival kit. Rather than just carrying a small length of fishing line, some hooks and a few sinkers, a few extra ounces of dedicated kit can be the deciding factor between being fed and going hungry.

We recently took three different types of fishing devices to a remote lake situated at an altitude just shy of 11,000 feet in Colorado to test various methods of catching fish. We hiked to this undisclosed location and caught cutthroat trout over the course of five days and four nights. We hooked dozens and gained valuable insight into three alternative ways to fish.

HANDLINING

Hobo fishing is the process of using a soda can as a fishing reel with line wrapped around it. If your can collapses when wrapped, a sturdy water bottle can be used, but depending on its size, it can be cumbersome to hold onto. The Exotac xReel (exotac.com) is a compact solution that takes the hobo fishing concept to the next level. The xReel has a finger loop to secure it in hand and it also has an internal screw-lid storage compartment. It takes some practice to learn how to cast a handline, but the best tip we have is to swing a long length of line instead of a short one. When spun in a circle to the side, a long length of line with a heavy weight makes it easier to predict when the line has the speed and momentum to cast at the right point in the circle. A shorter length makes the swing less controllable and too difficult to gauge. At the very moment of release, the best results came from pointing the open face of the spool in the direction of the cast.

Using a combination of float and fly, like we did with a scud or freshwater shrimp pattern, gives the user extra weight to cast the xReel to the end of the line on the spool. The use of a float or bobber truly helps the handline fisherman, as repeated casting and retrieving can be tiresome with this method, and a longer soak is sometimes needed with certain presentations. A single heavier weight can be used in lieu of the float for bottom fishing. Additionally, using braided fishing line helps the line cast further, because it's lighter and more can be spun on the reel. Setting the hook requires a firm yank on the line, while placing a thumb over the line serves as a progress saver.

A POLE LIKE THIS IS EASY TO PACK, AND EXTENDS TO GIVE YOU GREAT REACH OVER THE WATER!

The Reyr Gear First Cast is a compact hybrid fly rod-and-reel combination with an internal line.

CANE POLE

Cane pole fishing is an old-school method of fishing with a long, springy pole with fishing line tied to one end. The pole helps play the fish as it fights and the length of the pole lets the fisherman reach out over structures and stay low and out of sight of the fish. Cane poles are impractical to pack and there is no guarantee the local flora will provide a sufficient pole for fishing. Enter the Wetfly Backcountry rod (wetflyfish.com). This rod weighs less than 2.5 ounces, packs down to only 13 inches and extends to 10 feet long. This Tenkara rod works in a similar way to a cane pole, but the technology behind it makes the compact package a no-brainer for stowing in a survival kit. Both floating and sinking lines can be used for various water conditions and fishing techniques. From mountain creek trout to backwoods ponds with nothing more than bream and assorted sunfish, this rod will deliver.

The Exotac xReel has an internal container that holds basic tackle.

While designed to use traditional dry flies and subsurface patterns, the Backcountry can be used with hook, line, sinker and live bait. The best fishing with the Backcountry happened on the brightest days when fish were easily spotted just below the surface of the water. With limited reach, stepping out onto rocks to reach deeper water improved our odds. Of course, when standing on uneven platforms like that, you must be mindful of your balance. Extreme care must be exercised in cool weather. The 10-foot length of rod makes hook sets simple with a slight flick of the wrist. Retrieving fish requires lifting the rod near vertical while working the fish into your other hand. The Backcountry comes with a storage tube, but as long as the rod is protected, it can be carried on its own in a very lightweight compact package.

FLY-FISHING

To countless sportsmen, a traditional fly rod is the ideal tool to hook fish. Traditional rod-and-reel combinations

YONAH PACKS
WETFLY
4 LB
UMPQUA
Bug Flote
1/2 FLUID OUNCE

The Yonah Packs Simple Pack is a great addition to your fishing gear.

A rod and reel aren't absolutely necessary to land dinner, but they help.

can be costly. Multisegment rods are great for travel, but if any of these pieces are lost, you can't expect to fish with a partially complete rod like a complete one. Enter the Reyr Gear First Cast (reyrgear.com). This rod is not a traditional fly rod and it doesn't perform like one. Since it is telescoping and the line is internal, the rod has a little more friction to it when feeding line out. While not a true fly-fishing rod, it is a hybrid that has no parts to lose, and the ease of extending it to length and taking it down makes it an ideal survival-fishing companion. It is still capable of traditional 10-and-2 casting but it excels with a simple roll cast where the line is flicked out onto the water. As with any fly-fishing cast, the key is smooth presentation on the water instead of slapping it with your line, leader, tippet and fly.

A combination of flies and patterns can be

YONAH PACKS SIMPLE PACK

When it comes to travel at higher elevation, the old adage "ounces become pounds and pounds become pain" rings true. Rather than carrying an entire fishing vest or tackle box full of gear, the Yonah Packs Simple Pack was selected to carry in all the basics of fly-fishing. The Simple Pack measures only 5.5 inches by 4 inches by 1.5 inches. It can be worn on the belt, over the shoulder, around the neck or attached to a pack strap. The pack has a second slip pocket on the outside and lash points to hold hemostats, floatant, nippers, tippet material and even elastic loops for a Tenkara rod. At only 2 ounces, the pack starts off lightweight, and considering the minimalist nature of fly-fishing equipment, you won't cross the comfort threshold for necklace carry. Should your pack fall in the water, rest assured it won't sink to the bottom. A good rod deserves a good pack to support it. This is the one we're taking.
Find it at yonahpacks.com.

Tenkara rods like the Wetfly Backcountry do not require a reel. They are an update to the cane pole concept.

Using the right fly at the right time will get the job done.

used on a single fly line. Much like the concept behind a long line or trot line, this technique lets the fisherman determine at what depth the most action is. A terrestrial like an ant or grasshopper can be used on the surface, followed by a woolly bugger or midge below. These patterns are incredible on their own, but when used in conjunction with one another, they increase the number of hooks in the water and your chances of pulling in a fish.

During this trip to the mountains, numerous fish were caught with all methods. It is worth noting the flies used with all of these methods were interchangeable with one another. Hypothetically, if one method were carried as a primary means to fish, either of the other two could be carried as a backup or handed off to another member in a survival party to get more lines in the water. If a boat were available, we would have liked to fish the center of the lake, which would have favored the simple jigging motion of the xReel. We also would have liked to use the Backcountry on remote streams with small pools of water. Given the conditions, the First Cast was the top performer all around. That said, we caught our limit time and time again and would put our faith in any of the methods mentioned, paired with a little skill.

Kevin Estela is the bestselling author of *101 Skills You Need to Survive in the Woods* and *Beyond the Field*. He has been an outdoor educator for over two decades teaching bushcraft, survival and firearms courses across the country. He is a lifelong avid outdoorsman with interests in hunting, fishing, camping and canoeing/kayaking. Learn more at kevinestela.com.

HIDE & SEEK

Mastering the eight S's

BY CRAIG CAUDILL

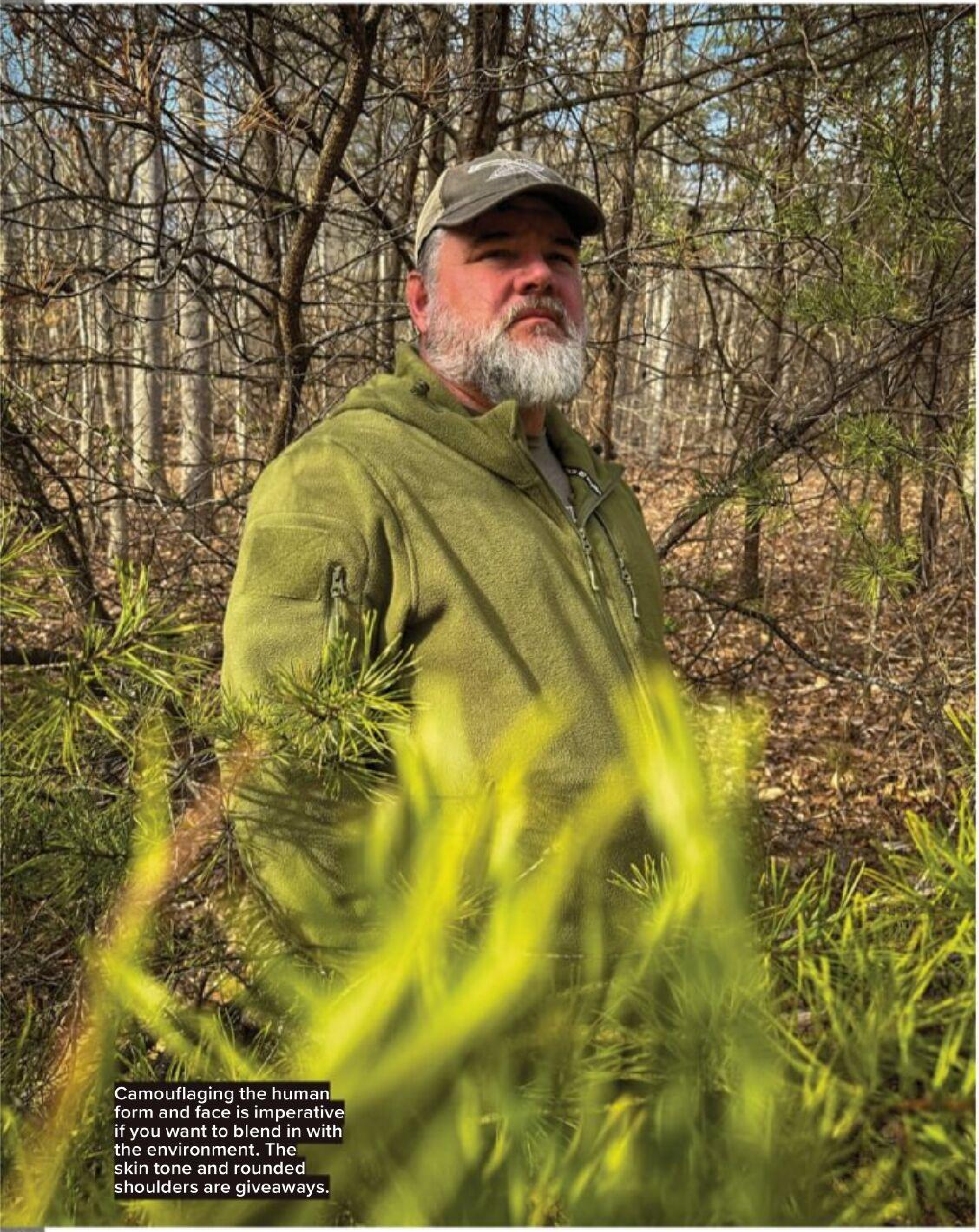
IN THE VAST EXPANSE OF THE OUTDOORS, WHERE NATURE AND ITS ELEMENTS REIGN SUPREME, CAMOUFLAGE IS A TESTAMENT TO HUMAN INGENUITY AND ADAPTABILITY.

Whether for hunting, tactical operations, wildlife photography, or even paintball and Airsoft games, effective camouflage can mean the difference between being seen and unseen, between success and failure. This mastery of blending in is not just about wearing the correct pattern or colors. It involves a deep understanding of the eight S's of camouflage: silhouette, shine, shadow, shape, shade, sound, speed and smell.

With some knowledge and practice, you can blend in with your surroundings fairly well.

SILHOUETTE BREAKING THE HUMAN OUTLINE

An old hunting mentor of mine said many years ago that a human face, with its round shape and coloration, is the only element out there with that appearance. Therefore, he recommended that I camouflage my face to help hide myself. That goes for the body's silhouette as well. The human silhouette is unmistakably distinctive, a telltale sign of human presence in the natural world. To effectively camouflage oneself, it is imperative to disrupt this outline. This can be achieved through specially designed clothing and gear, such as leaf suits, ghillie capes, or loose head and neck scarves, all of which have 3D elements to break up the human form. Attention must be paid to the most commonly exposed areas, which are the head and shoulders. Employing an oversize hood and augmenting the sides of the head with extra material can obscure the neck and face, minimizing the recognizable human shape. Some other body parts our students see in our Scout Tracker class are the shoulders and rounded boot heels. They will stand out if these are placed so that their silhouette is definable against the surroundings. Additionally, choose your position wisely: Avoiding high points that silhouette against the sky—and favoring natural depressions or cover—can greatly enhance concealment.

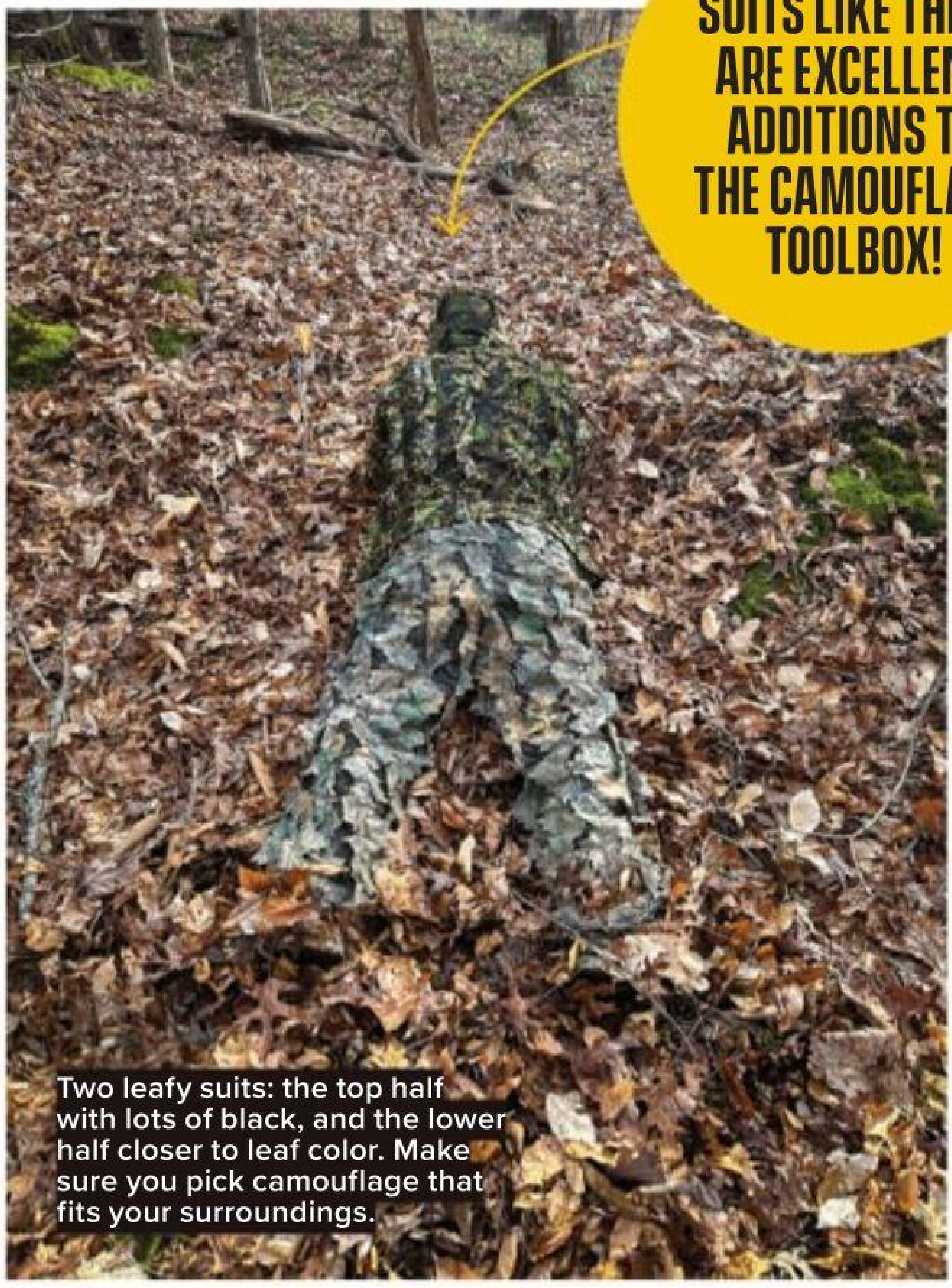


Camouflaging the human form and face is imperative if you want to blend in with the environment. The skin tone and rounded shoulders are giveaways.

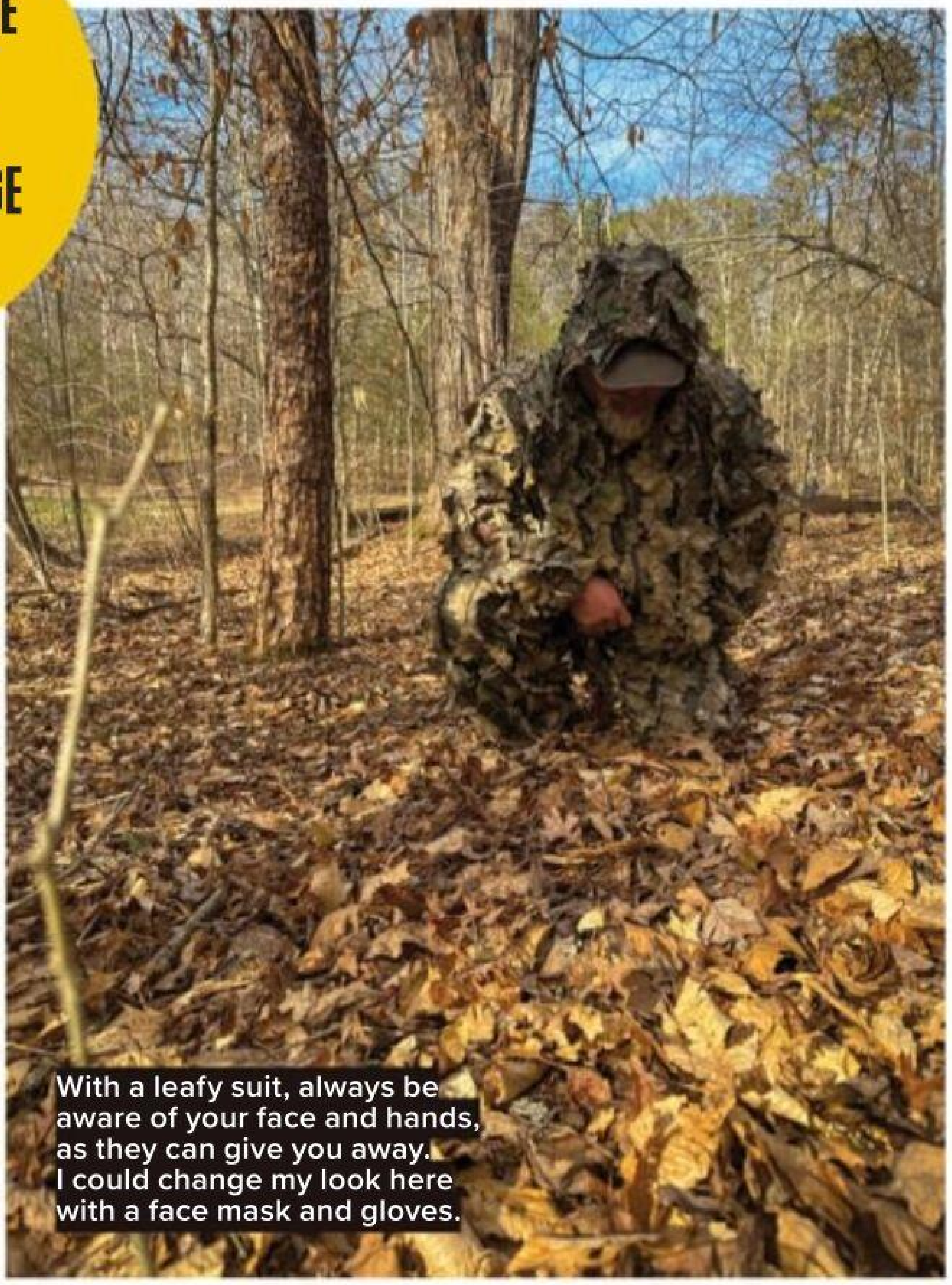
SHINE DULLING THE GLARE

Objects that reflect light can betray a hidden position. Everything from plastic buckles to firearms and knives can draw attention. Matte spray paints and fabrics can be applied to equipment to counter this, dulling their surfaces and reducing reflection. Particular attention should be given to the eye area, upper cheeks and nose, which are often overlooked yet are highly reflective. Eyes can be reflective when the sun hits them at the right angle. Solutions range from mesh goggles, which can be painted to disrupt their outline, to lens skins that mask the reflective

SUITS LIKE THESE ARE EXCELLENT ADDITIONS TO THE CAMOUFLAGE TOOLBOX!



Two leafy suits: the top half with lots of black, and the lower half closer to leaf color. Make sure you pick camouflage that fits your surroundings.



With a leafy suit, always be aware of your face and hands, as they can give you away. I could change my look here with a face mask and gloves.

surfaces without impairing vision. Face paint is another option. Any face paint should be a mixture of colors from the surroundings.

SHADOW THE ART OF USING LIGHT

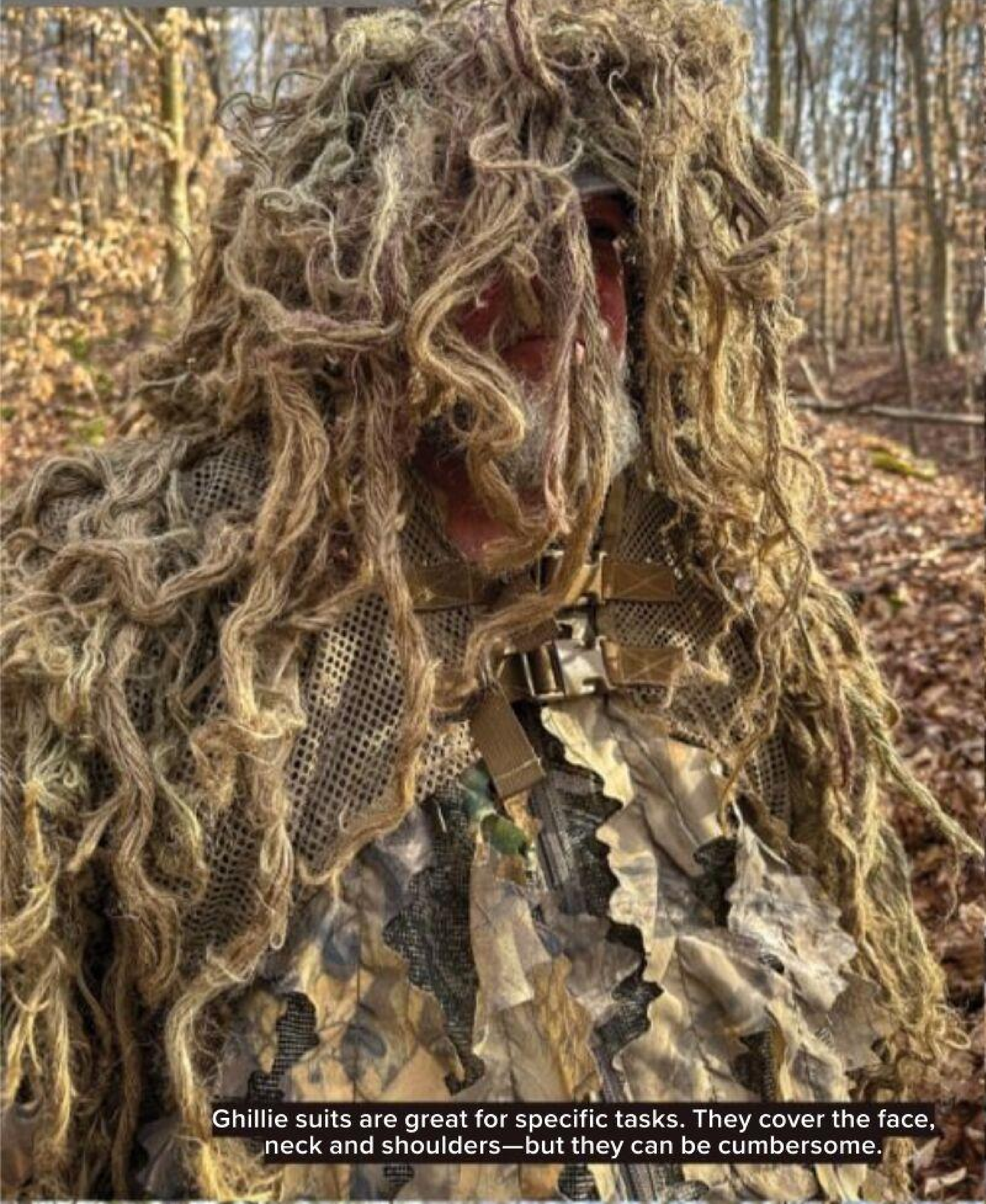
Shadows can be as revealing as the object or person casting them. The savvy outdoorsman knows to use light to their advantage, moving within shadows whenever possible and being mindful of the shadows they cast. In essence, no matter how good your camouflage is, we cannot hide a shadow in open light. A good woodsman will move from shadow to shadow to remain hidden in each area. I typically map out in my head my travel corridor or approach to a location. This mindset includes always understanding where the sun is relative to my position. For example, a stand hunt that lasts all day will have shadows that have changed in direction with the sun through the day. Keep these in mind for long-lasting hunts or stalks.

SHAPE MATCHING THE ENVIRONMENT

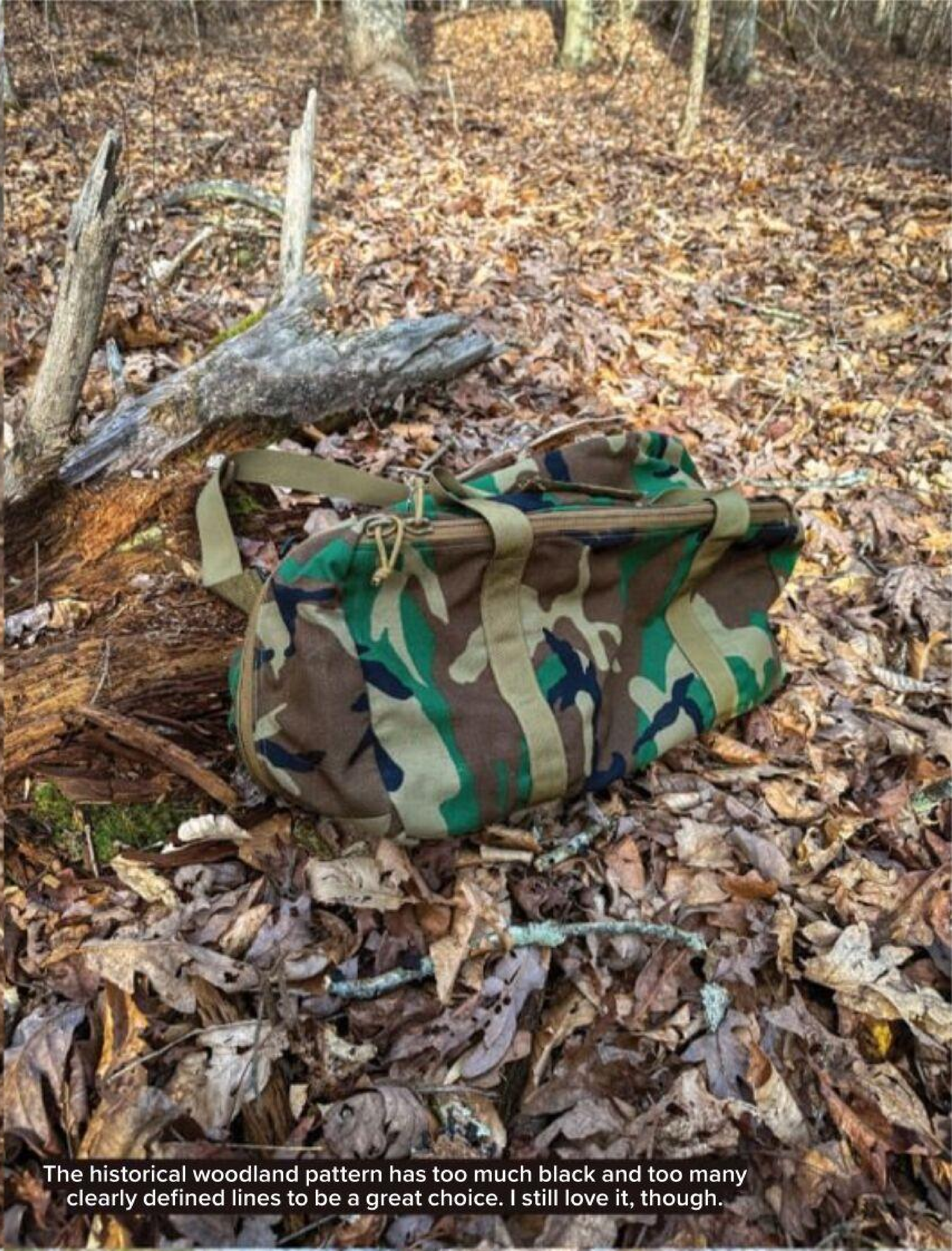
The shape and texture of your camouflage should reflect the environment you're in. A mismatch in pattern or form can stand out just as much as the wrong color. Adaptability is vital, including techniques such as attaching local flora. Just remember that flora should look as it does in the environment. For example, unless I'll be lying on the ground, I won't put a mayapple leaf on my boonie hat. You should adjust the distribution of camouflage elements to better blend with the surrounding terrain. Ghillies are special garments that allow lots of three-dimensional material, both man-made and natural. A sniper instructor taught me to find environmental pieces to add to my ghillie as I move through an environment. This means that anything looking in my direction will see the environment in front of and behind me that matches what I have on.

SHADE THE COLOR OF CONCEALMENT

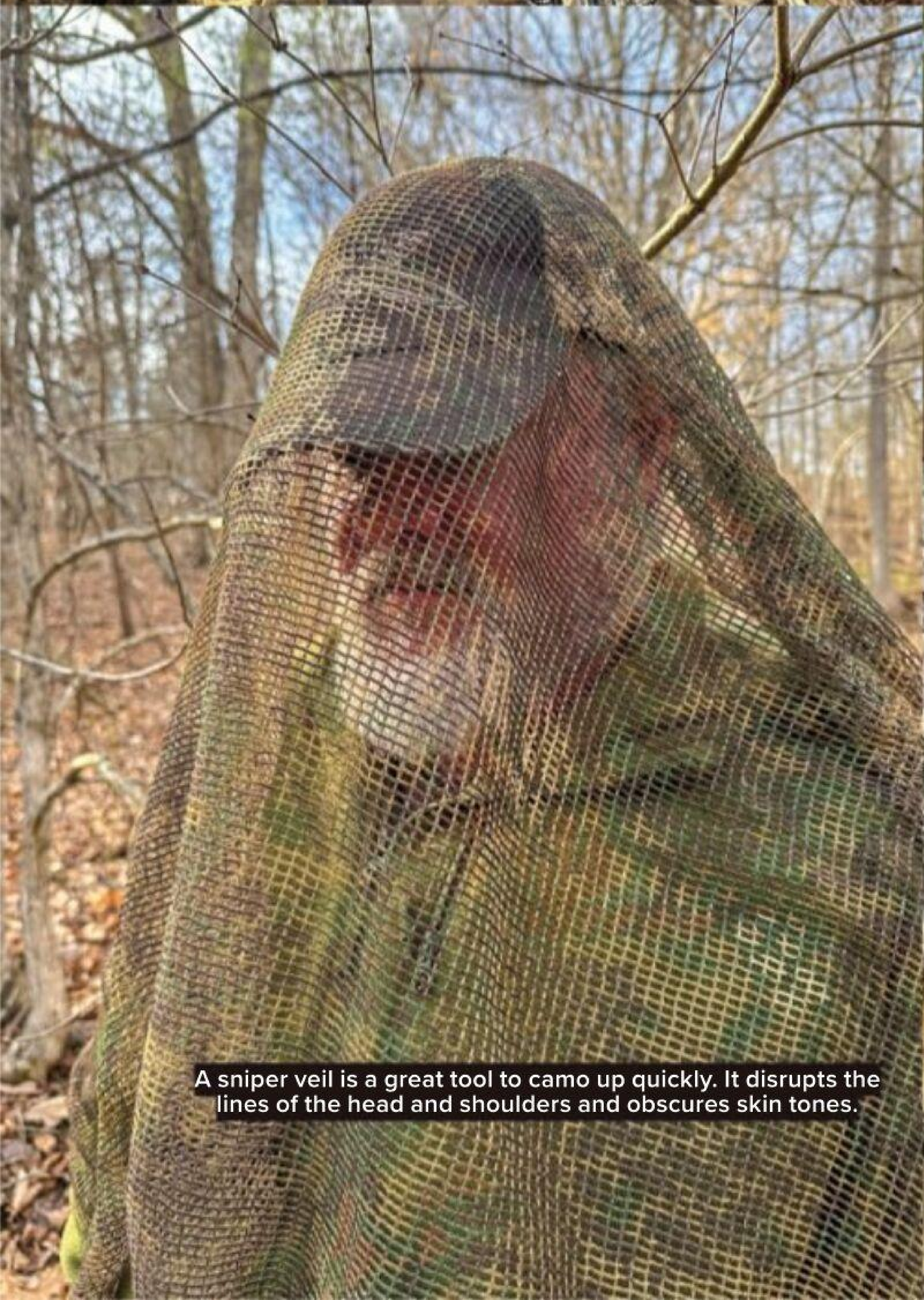
Color matching is crucial in camouflage. The shades of your gear and clothing should complement your operating environment. This principle extends beyond just the color. The brightness and saturation should also be considered to ensure a seamless blend with the natural or urban landscape. For example, there are not many solid black natural materials in your typical mixed hardwood forest in the United States. Therefore, solid black



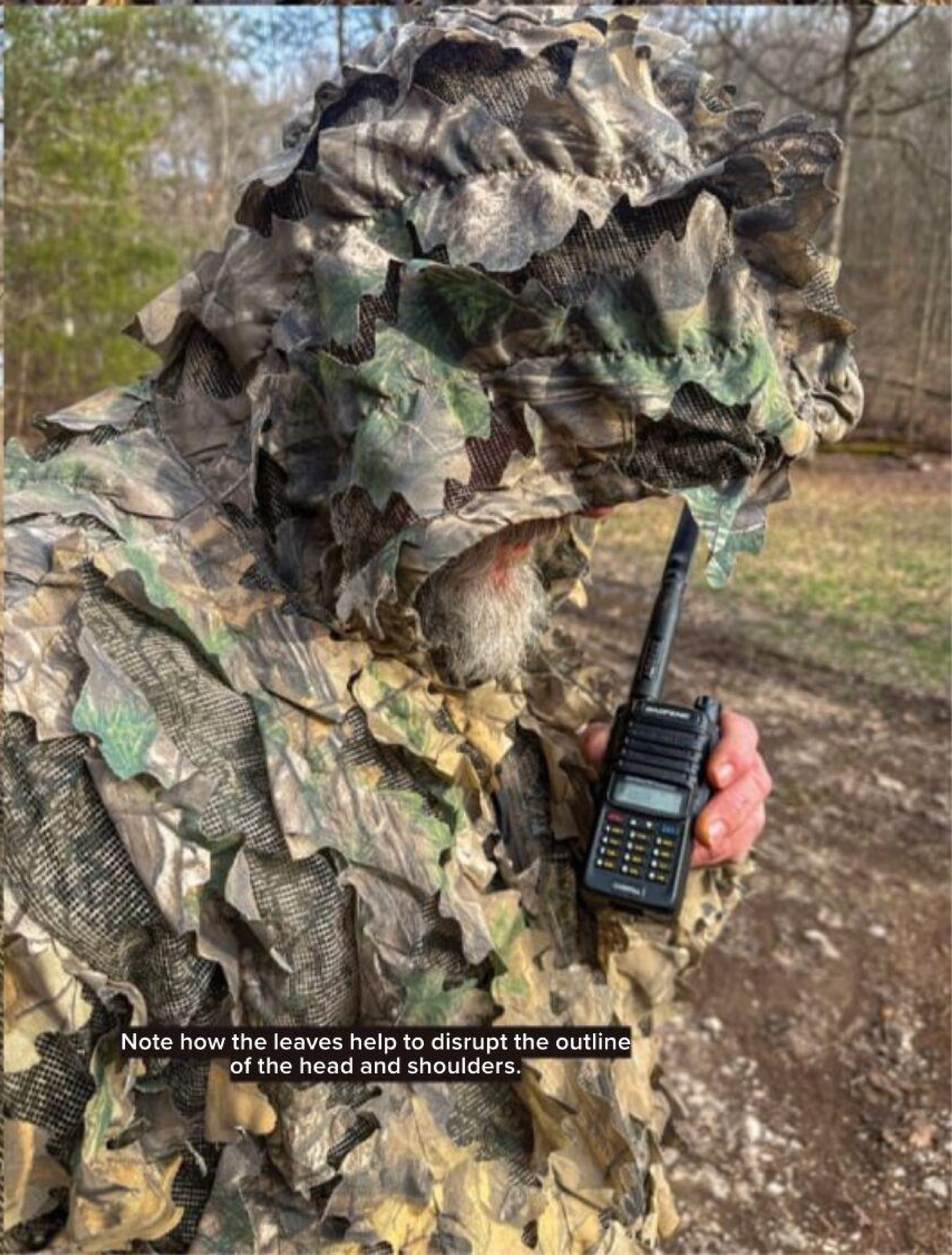
Ghillie suits are great for specific tasks. They cover the face, neck and shoulders—but they can be cumbersome.



The historical woodland pattern has too much black and too many clearly defined lines to be a great choice. I still love it, though.



A sniper veil is a great tool to camo up quickly. It disrupts the lines of the head and shoulders and obscures skin tones.



Note how the leaves help to disrupt the outline of the head and shoulders.

patterning in wearable camouflage can be easily seen unless dulled with natural materials. The key in all camouflage shade and coloring is not what you put on, but matching it to the environment. The camouflage I wear in my home state of Kentucky is a terrible choice when I teach man-tracking in Utah or Texas, for example.

SOUND SILENCE IS STEALTH

Minimizing sound is a fundamental aspect of camouflage that often goes overlooked. Securing loose gear, silencing equipment and moving with utmost care can prevent giving away your position. Awareness of ambient sounds and how to move without disrupting them is as critical as visual concealment. If you need to cough or sneeze, do it inside a shirt or coat to muffle the sound. If you are stalking a quarry, change the direction to cast noise away from the quarry. You can also use environmental sounds to cover movement. It's a much better time to move when the wind moves, rather than when everything is perfectly still.

SPEED THE VELOCITY OF VISIBILITY

Fred Bear, the well-known bow hunter, is rather famous for saying that the best camouflage in the world is to "sit down and shut up." Rapid movement catches the eye. When camouflaged, every motion should be deliberate and slow. Quick turns, sudden stance changes or fast movements can quickly reveal your position. Planning gear layout for minimal movement and practicing smooth, slow actions can significantly enhance concealment. This includes your surroundings. If you are moving through branches and you release one behind you and it swings quickly, it will catch the eye of your quarry. I often tell our Scout Tracker students that they should take a step about once a minute to give them some definable numbers. Also, if you need to go to the ground or get up from it, it should take about five minutes. It seems long, but this timing is needed when a quarry has excellent eyesight and observation skills.

SMELL THE WIND IS YOUR FRIEND —OR ENEMY

I was gifted a good sniffer when I was born. I smell things that most people don't. I am no white-tailed deer, but I can tell you I often smell deer coming before I see them. They can smell me if I don't put myself in the correct position for success. The wind carries scent, as do thermals. If you put yourself where the wind is traveling to your quarry or direction of travel, they will pick up on that before you get there. You can use a cover scent, especially on your feet, but not too much. When hunting quarry with a good nose—and I have time—I will store my clothing in a garbage bag alongside natural materials, including cedar shavings and soil, so I smell more like the environment. That said, if there are no cedar trees in the area, that can indicate your presence to your quarry. Just like clothing, your scent should match your environment.

Mastering the eight S's of camouflage is both a science and art form that requires practice, patience and a keen understanding of the environment. It's a dynamic skill set that adapts to the variables of the natural world and the individual's objectives. Effective camouflage is a testament to the symbiosis between human cunning and the complexity of nature, whether for tactical advantage, wildlife observation or simply the thrill of blending into the natural world.

PATTERNS

What camouflage pattern is best? There are so many variations that, for some, it feels like getting ready for hunting season is akin to getting dressed up for prom. It does not have to be this way. I teach elite military units and hundreds of civilians how to track and camouflage correctly. Some of the best I have seen in our coursework was done with rattle-can spray paint. The goal in camouflaging anything is to have good colors that blend well at the edges. Any camouflage with distinct lines and colorations will be seen more quickly than those that blend colors well. Also, if you have difficulty telling exactly what color it is, you have a good color. In nature, it's challenging to pinpoint what exact color something is. Most are earth-toned, meaning it is a mix of brown, gray and green. When you have difficulty distinguishing the colors, then the quarry you are after most likely will as well, allowing you to stay hidden from sight.

Craig Caudill is the director of Nature Reliance School and the author of several backcountry skills books and field guides. You can train with him online or in person, or pick up one of his books at naturereliance.org.

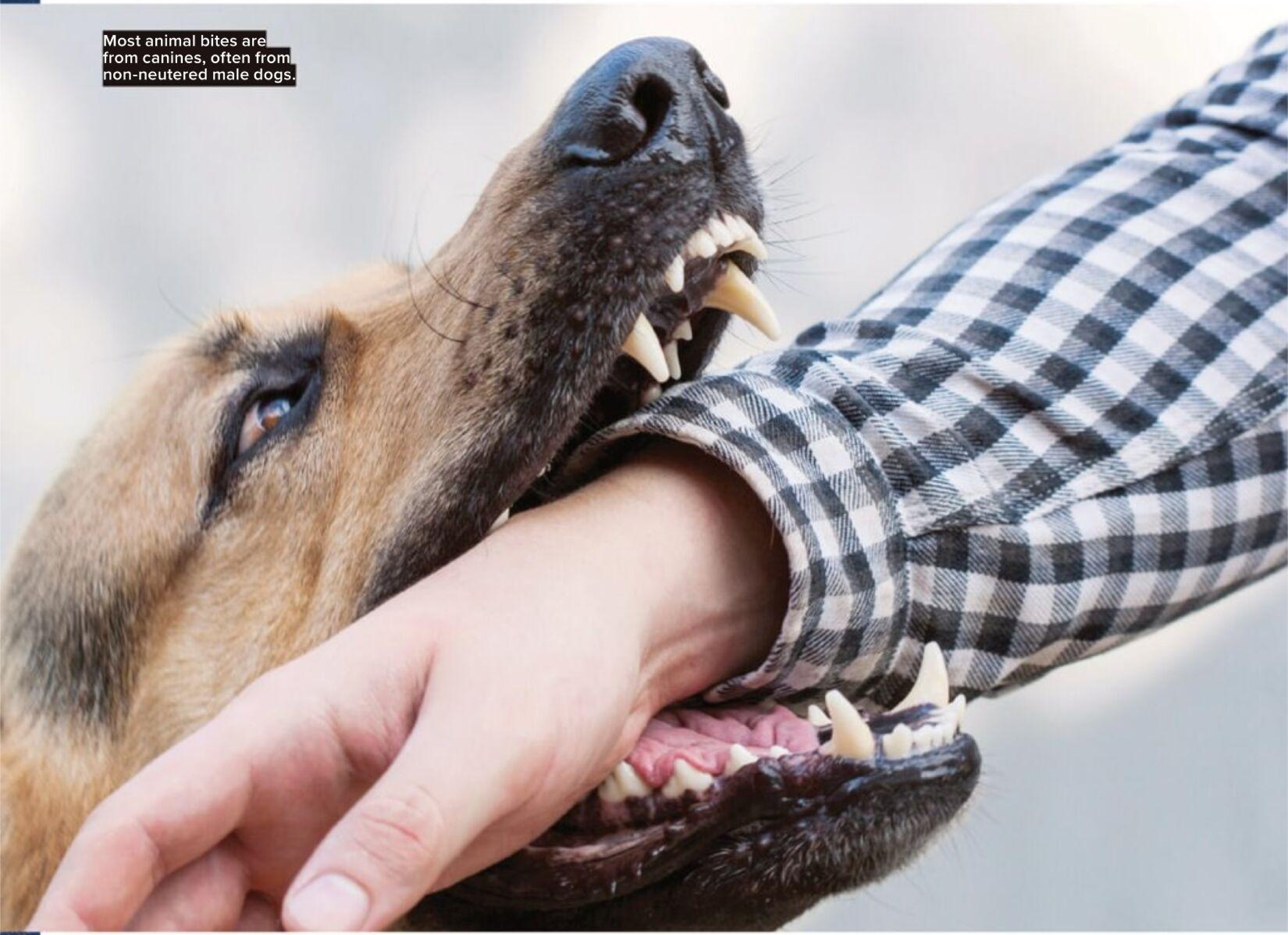
While most animals are more afraid of us than we are of them, if cornered they can—and will—lash out.

NATURE HAS TEETH

What to do if you get bit

BY JOE ALTON, MD

THE GREAT OUTDOORS IS, WELL, GREAT, BUT THERE'S ALWAYS A RISK OF COMING FACE-TO-FACE WITH ONE OF ITS RESIDENTS. MOST OF THESE ENCOUNTERS WILL BE BENIGN, BUT IN SOME CIRCUMSTANCES, YOU MIGHT NOT BE SO LUCKY.



Most animal bites are from canines, often from non-neutered male dogs.

Half of all Americans will experience an animal bite in their lifetime. Bites from mammals number in the millions annually and account for about 1% of all emergency room visits. Most of these wounds are inflicted by dogs and cats, and often on kids. Deaths from animal bites are rare, but bleeding, nerve and tissue damage, crush injuries, infection, and pain are common—not to mention psychological trauma. Every year, tens of thousands of bite victims require surgical repairs in the United States.

CANINES

Dog bites account for 80% to 90% of all injuries caused by animals. Although an attack from a wolf or coyote will make the news, most incidents involve someone's pet or a stray dog on or near the victim's property. About 30 dog attacks each year, mostly from non-neutered male dogs, turn fatal. The breeds most likely to cause significant bite injuries include pit bulls, Rottweilers, Dobermans, German shepherds and huskies. Commonly, their victims are young children.

Dogs and other canines have 42 teeth as adults. These are designed to rip, shred and tear flesh. As a result, some of the more severe canine bite wounds may have gaping lacerations, sometimes with flesh torn off. Swelling from the pressure of the bite or infection is also common.

Wolves and coyotes may appear similar, but the size and strength of a coyote can't compare to that of the much-larger gray wolf, and the same can be said of their bite. Wolf bites exert about twice the pressure of a German shepherd bite. Their bite is so powerful that it can chew through the femurs of elk and moose. Coyotes, on the other hand, have a bite similar to that of a medium-sized dog.

For various reasons, wolves haven't adapted as well to encroaching civilization as the coyote, which has actually increased its range over the decades. You're much more likely to run afoul of a coyote in your suburban neighborhood.

Contrary to the opinions of some, wolves and coyotes will attack humans if the opportunity arises. The most recent fatal attacks occurred this century. A young man in Saskatchewan, Canada, was killed in 2005 by healthy wolves that had become accustomed to people. In 2010, a young woman died while jogging in Alaska. In 2009, another young woman was killed, this time by coyotes, in Canada.

FELINES

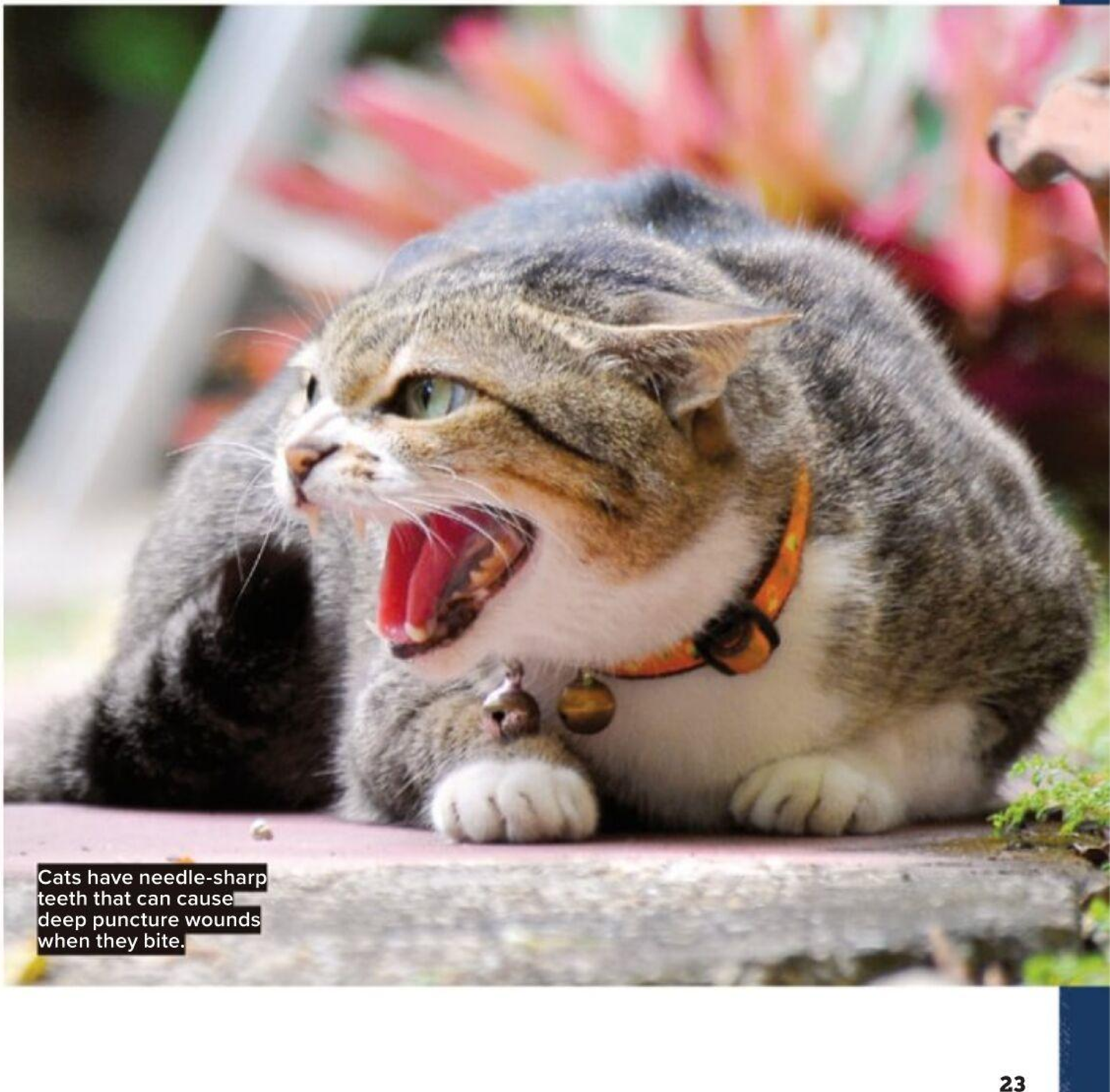
Cat bites represent 5% to 15% of all animal bites incurred by humans, although many cases aren't reported due to the small size of the injury. The most aggressive breeds are usually hybrids with genetics that come from wild cats, like Bengals.

Even if the amount of trauma is small, puncture wounds by cat teeth can be deep and are more likely to cause infection than dog bites. Infection occurs in 10% to 15% of dog bites but close to 50% of cat bites. One reason may be the depth of the wound. Not only is it difficult to clean the site, but the needle-like teeth push bacteria deep into flesh, tendons and joints. The organisms find the environment favorable and multiply, causing swelling, redness and pain.

In addition to their 30 teeth, domestic cats also use their claws in attack or defense, causing scratches that can lead to Bartonella infection, also called cat scratch fever.

Attacks by large cats like mountain lions are rare, but fatalities occurred in 2018 in Oregon and Washington. Injuries include lacerations, broken bones and crush damage. Smaller wild cats like bobcats and lynxes, if healthy, are shy and avoid contact with humans, but can inflict deep bites and, unlike domestic cats, deep claw wounds as well.

IT ISN'T A BAD IDEA TO CARRY PEPPER SPRAY WHEN YOU'RE OUT ON A WALK OR A HIKE, FOR TWO-LEGGED THREATS AS WELL AS FOUR-LEGGED ONES.



Cats have needle-sharp teeth that can cause deep puncture wounds when they bite.

RODENTS

The Rodentia family is characterized by a single pair of continuously growing incisors in both the upper and lower jaws. Members include rats, mice, squirrels, beavers, porcupines and many other animals. Indeed, they comprise about 40% of all mammal species. Rabbits were once considered rodents, but are now categorized as a related group called lagomorphs. The teeth of all these animals can be quite long and sharp, and thus inflict smaller but very painful bites.

Rat bites are the most common type to generate a visit to an emergency room. The wounds may be shallow or deep. The main concern with rodent bites is the diseases they transmit, such as rat bite fever and tularemia, commonly spread by rabbits.

OTHER SMALL MAMMALS

Among the other small mammals capable of delivering a nasty bite are raccoons, possums, skunks and foxes (foxes can be included under canines, but belong to the genus Vulpes, not Canis like dogs, wolves and coyotes). Although painful, most traumatic injury is minor. Some of these animals, however, are known carriers of the rabies virus. Raccoons, skunks and foxes can all carry the disease. Rabies seems to be very rare in possums, possibly due to them having a lower body temperature than the average mammal.

ChitoSAM 100
STOPS BLEEDING FAST
SAM
QuikClot Combat Gauze
CELOX RAPID
QuikClot Bleeding Control Dressing

IF NOT TREATED PROPERLY, BITES CAN BECOME BADLY INFECTED, LEADING TO WORSE ISSUES.

TREATMENT

Most bites from small animals don't cause significant trauma. Larger mammals, however, are another matter. There are defensive/warning animal bites and then there are animal attacks, where the victim is knocked down by a substantially sized adversary, bitten repeatedly, and, in some cases, injured by claws. Thankfully, these are few and far between, but those injured may have multiple bleeding lacerations with significant soft tissue damage.

Major injuries should be treated as you would any trauma. Abolish the threat to the victim (and yourself). Large mammals like bears may return for round two, so leave the area if at all possible.

If a bite wound is severe and actively bleeding, place a dressing or cloth barrier on it immediately and apply firm direct pressure (preferably with gloved hands). If the first barrier gets saturated, pack fresh ones right on top of it.

If the blood is bright red and spurting from the site, a better first step is to apply a tourniquet. Some of the most popular include the C.A.T., SOFT-T and SWAT-T. Having a good supply of sterile bandages, as well as hemostatic dressings (QuikClot, Celox or ChitoSAM), would also be helpful for hemorrhage control and to protect the wound. If you use one of these special blood-clotting products, remove saturated bandages first and pack the hemostatic dressing at the point of bleeding. Cover with a pressure dressing like the Israeli battle dressing, aka “the emergency bandage” in the U.S.

In most small mammal bites, the marks left may seem insignificant. Any puncture of the skin, however, is something to worry about. Skin is the body’s armor, and any breach leaves the victim open to infection. Any person who has been bitten by an animal should:

- Seek medical care by qualified professionals (if possible), especially if the skin is broken.
- Control the bleeding.
- Clean the wound thoroughly with soap and water for several minutes. If there’s no running water, flush the wound aggressively with a 60 cc to 100 cc irrigation syringe filled with clean water. That will help remove embedded dirt and bacteria-containing saliva. This should be done even if the skin is intact; it’s important to wash off any oral bacteria deposited there by the animal.
- Use an antiseptic to decrease the chance of infection. Betadine (2% povidone-iodine solution) or benzalkonium chloride (BZK) are excellent choices.
- Remove any rings or bracelets if there’s a bite wound to the hand. If swelling occurs, they may be very difficult to remove afterward.
- Use an ice pack to decrease swelling, bruising and pain.
- Apply antibiotic ointment to the area and be sure to watch for signs of wound infection. These may include redness, swelling or oozing. In many instances, the site might feel unusually warm to the touch. Warm, moist compresses to the area will help an infected wound producing pus to drain.
- Frequently clean and dress a recovering bite wound.
- Give medications such as ibuprofen or acetaminophen to treat pain at the wound site. Avoid aspirin for pain in children under the age of 18 due to the risk of Reye’s syndrome, a potentially fatal illness.
- If the bite has severed a body part, wash it with clean water, wrap in a sterile dressing and store in ice to transport with the victim to advanced medical care. If modern medical facilities can be accessed, a severed finger or ear might be successfully surgically reattached.

While this article is not about animal encounter safety, the simplest way to prevent animal bites is to stay away from wildlife and unfamiliar domestic animals. With known domestic animals, try to discourage aggressive play and closely monitor children at all times. If you handle animals often, wear personal protection gear, such as thick gloves.

If you’re alone and you encounter a large carnivore, try to appear as big as possible, such as by holding your jacket open and standing tall. Given the chance, back away slowly in the direction you came from, but do not run or you might be chased. Carry bear spray in areas where large carnivores are present. You’re safest in the company of others; even bears will hesitate to attacks groups of more than two people.

ANIMALS AND KIDS

Children who suffer animal bites may become traumatized by the experience and benefit from counseling. Youngsters should be informed about the risks of animal bites and taught to avoid stray dogs, cats and wild animals. Never leave a small child unattended around animals. Without an able-bodied person to intervene, the outcome may be tragic. It’s important for children to realize that no matter how cute and cuddly that critter looks, it might not appreciate being cornered.

Joe Alton, MD, FACOG, FACS, is an actively licensed physician, medical preparedness advocate, and the *New York Times* bestselling author of several award-winning books, including *The Survival Medicine Handbook: The Essential Guide for When Help Is NOT on the Way*, now in its 700-page fourth edition. He designs medical kits for survival scenarios at doomandbloom.net.

EATING

IF YOU KNOW WHAT TO LOOK FOR, YOU'LL RARELY EVER GO HUNGRY IN THE FIELD!

Always be certain of the plant's identification before consuming it.

WEEDS

Feed on these four common plants

BY ORION AON

FORAGING OFTEN INVOKES IMAGES OF WILD PLACES: A DENSE FOREST FULL OF MUSHROOMS, A THICKET OF BERRIES ALONG A MOUNTAIN TRAIL AND ACORNS SCATTERED ACROSS THE OAK FOREST FLOOR.

In reality, most foragers' plant harvesting occurs within a few miles of their houses or even in their own yards. Many common edible plants are weedy species adapted to human disturbance. These plants are referred to as pioneer or ruderal species, meaning they are the first to colonize areas of natural or unnatural disturbances in the land.

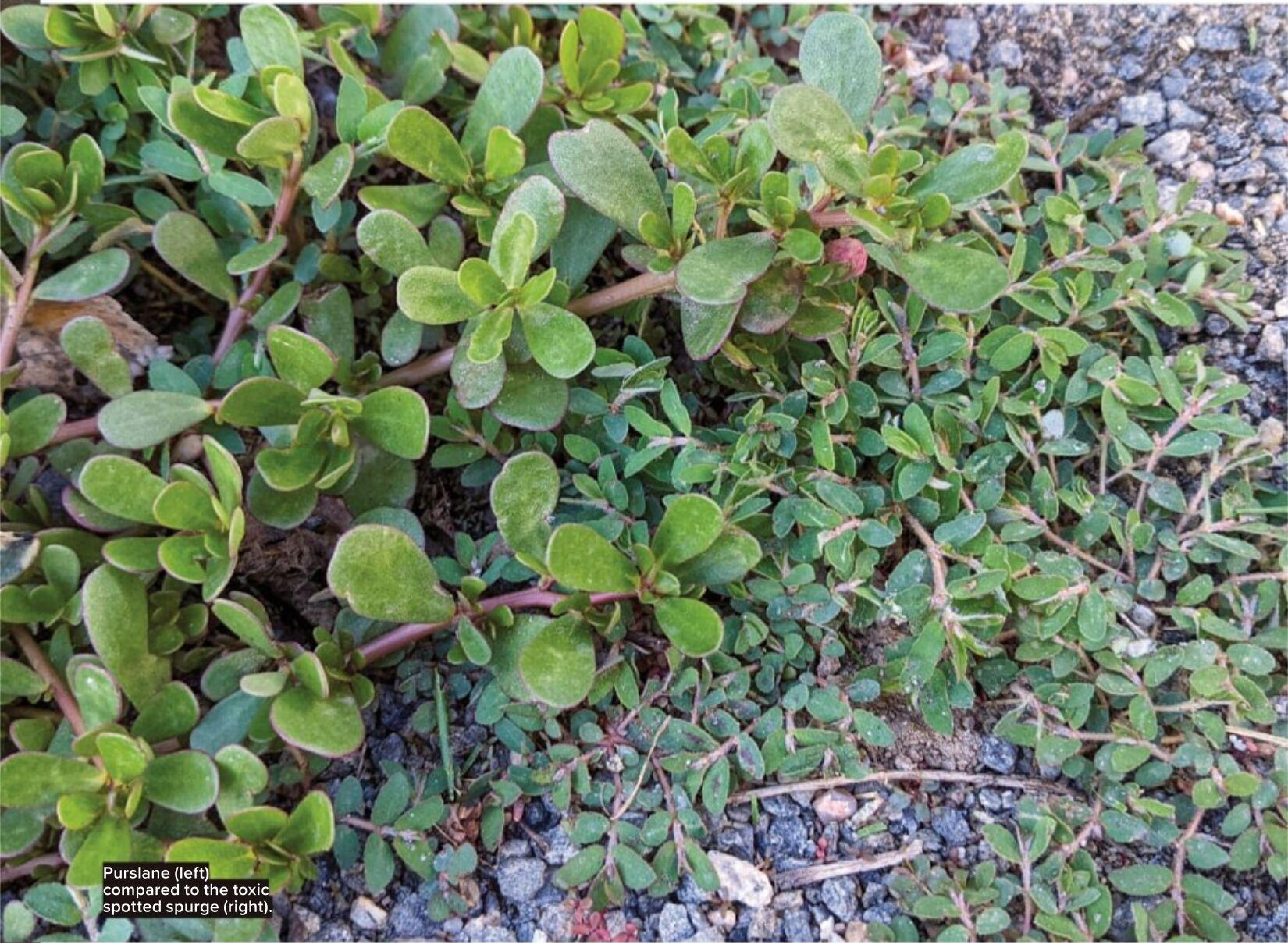
Humans are great at creating the perfect conditions for these plants, so they are commonly found in our midst. Most people see these weedy plants as pests and nuisances to deal with in their yards and gardens. However, a simple shift in perception can lead to lots of free, easy-to-grow food in your backyard. Here are four common species to forage instead of weed.

LAMBSQUARTERS

Lambsquarters (Chenopodium album), also known as wild spinach and white goosefoot, is one of the most widespread plants in the world and has a long history of being used for food. Lambsquarters is a small to medium-size annual. When young, the leaves are generally diamond-shaped with broad teeth. More mature leaves can become longer and lance-shaped. The leaves exhibit a chaotic, whorling, alternate growth pattern. The leaves and stems, especially the newest growth, are covered in a light coating of mealy granules that gives the plant hydrophobic qualities. The flowers and fruits are small, light-green clusters that grow around the central stem. The seeds inside the fruits are tiny and dark brown to black.

The leaves, stems, fruits and seeds of lambsquarters are all edible. The leaves are best harvested when young and tender. The easiest method is to pinch and break the stem with a thumb and index finger. This method allows you to easily find the tender portion, as the tougher, fibrous stems become challenging to pinch through. A pair of scissors or a small knife also make great harvesting tools for lambsquarters. The leaves and stems are similar to spinach and can be substituted in any recipe that would use spinach. They can also be quickly blanched and frozen for long-term storage.

The fruits are similarly best collected when they are young and tender. They can also be substituted for spinach, but their most common use is for a dish called huauzontles in Mexico. They are wrapped around Oaxaca cheese, battered and fried. The seeds can be dried and used as a grain, though they are



Purslane (left) compared to the toxic spotted spurge (right).

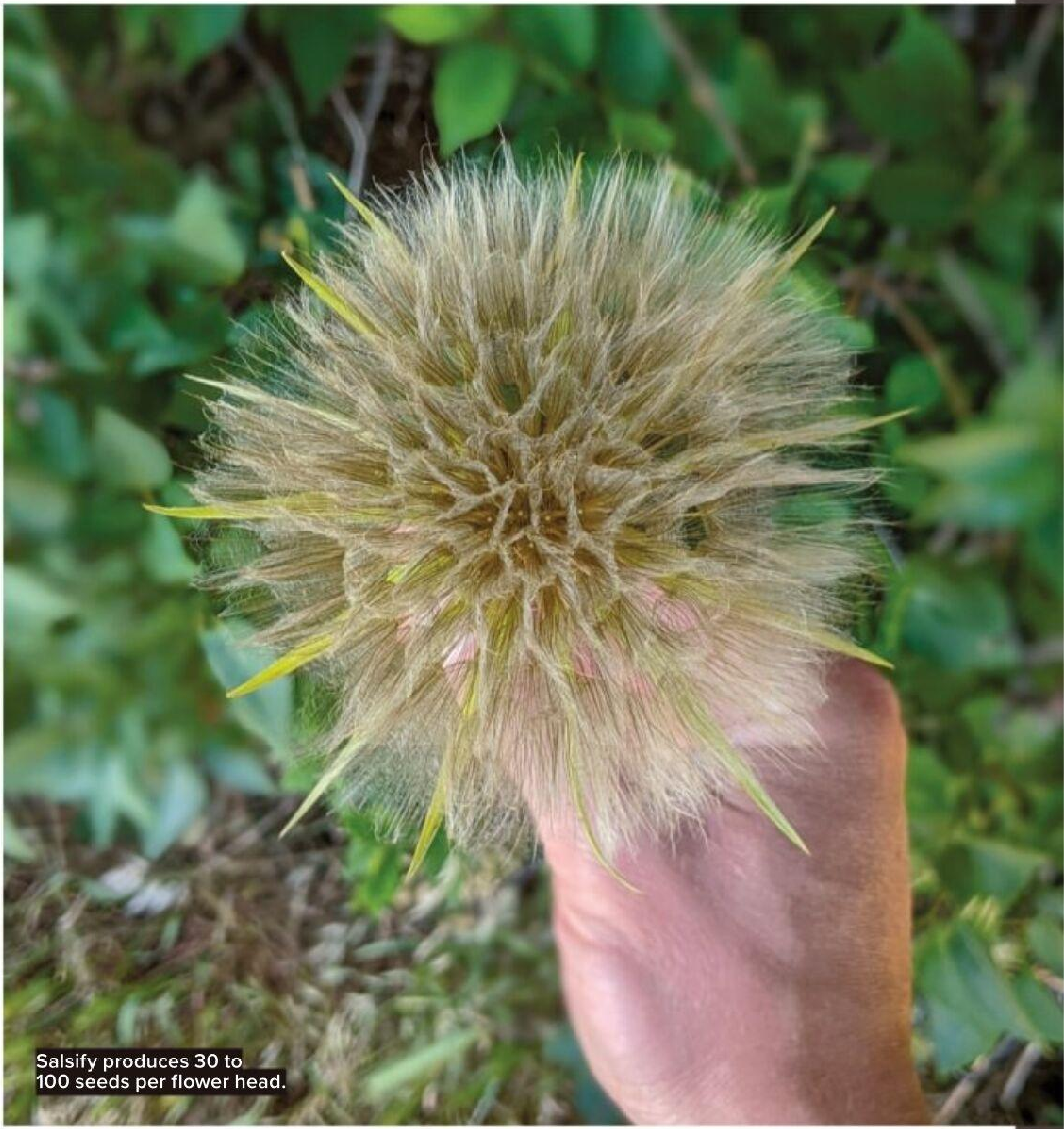
quite small and labor-intensive to process.

PURSLANE

Purslane (Portulaca oleracea), is a low-growing succulent annual commonly found in disturbed areas such as garden beds and walkways. It has smooth, branching stems that are sometimes reddish. The leaves tend to grow in clusters at the ends of the stems and are simple, small and generally oval. The flowers are tiny with five yellow two-lobed petals, and the fruits are small capsules that hold many black to brown seeds.

Purslane is easily harvested by breaking or cutting the stems where they are tender. Plants that have started producing seed capsules tend to be a little tougher, but the branch tips on these older plants are usually still tender. The flavor of purslane can be affected by when it's harvested. The plants tend to be more sour in the morning and milder in the afternoon. Purslane is also very high in omega-3 fatty acids.

Purslane is most commonly used in raw preparations such as salads because that highlights its tart flavor and crisp, crunchy texture. However, it can also be cooked, offering an entirely different eating experience. It is pretty mucilaginous and readily breaks down through longer cooking times, providing some natural thickening for the dish. Some other great uses for purslane include pickled purslane stems, purslane kimchi and purslane relish.

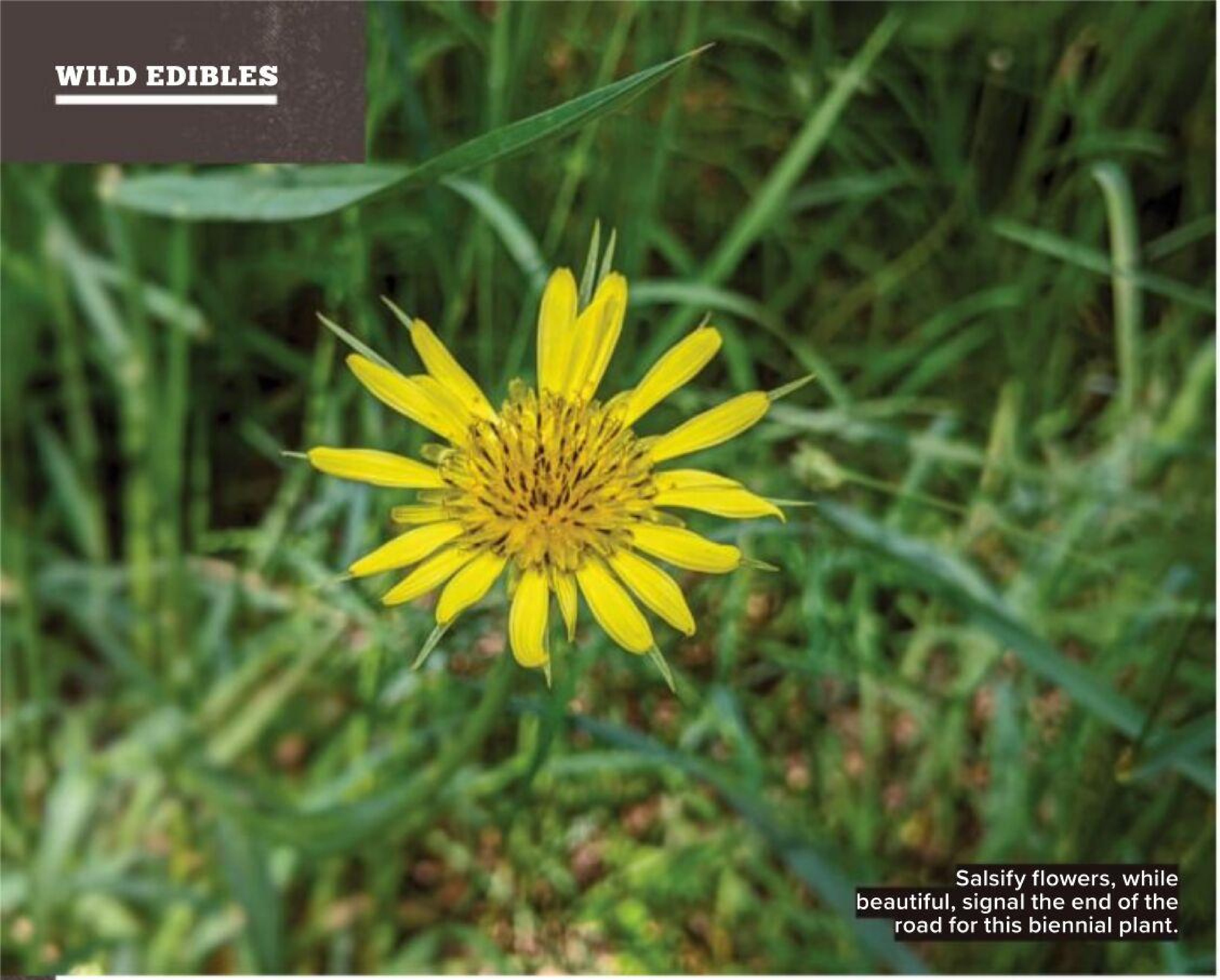


Salsify produces 30 to 100 seeds per flower head.

SALSIFY

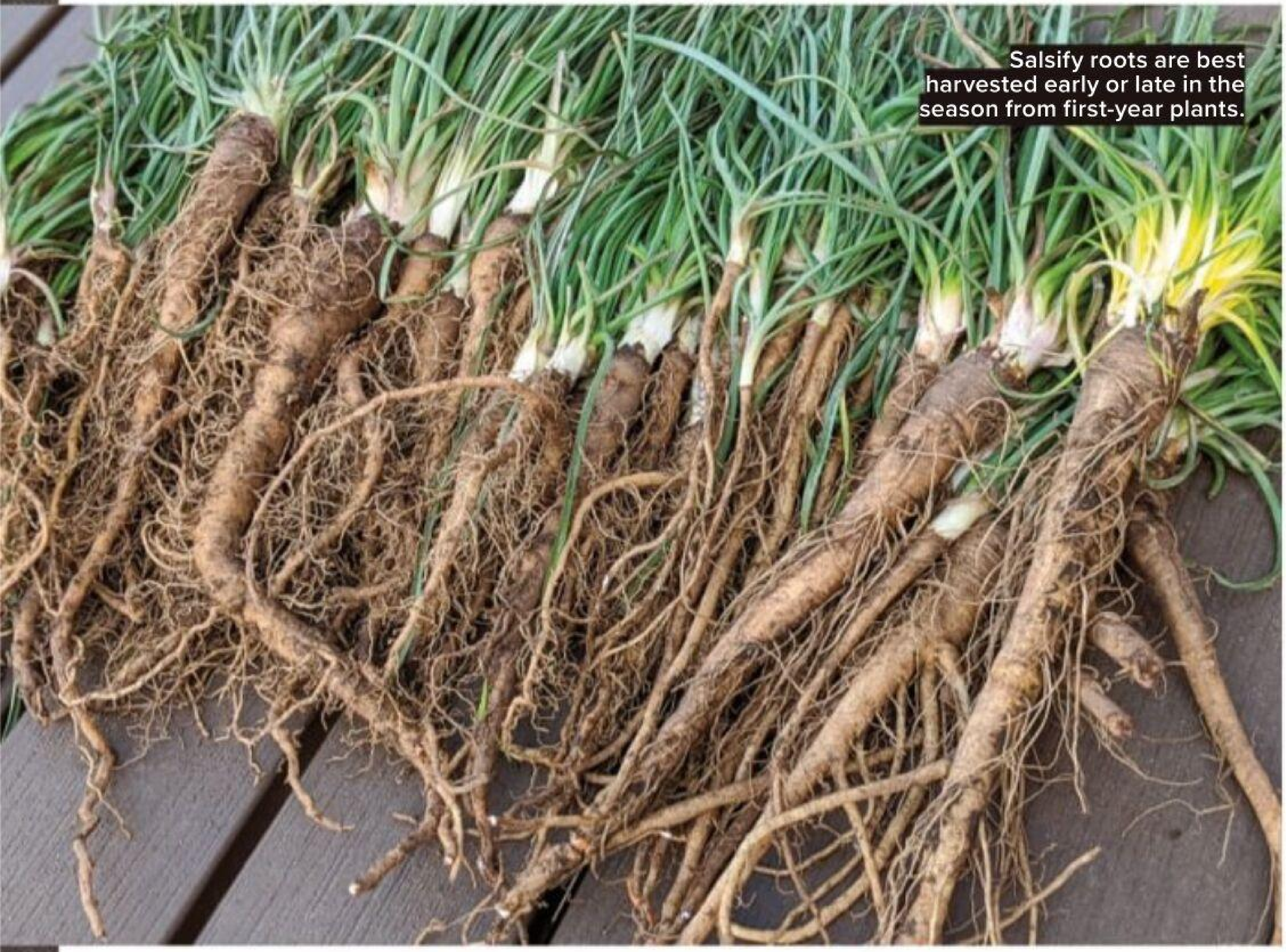
Yellow salsify (Tragopogon dubius) is a biennial plant. It grows from a single unbranching taproot. The leaves emerge from the taproot as a basal rosette and are long, narrow and U-shaped in cross-section. They can be a couple of inches to a foot in length. During the second year of growth, a hollow shoot emerges from the center of the rosette and branches into narrow, tapering flower buds. The entire height of the plant can vary from several inches to a few feet or more in the best growing conditions. The flower buds open to reveal yellow florets, eventually turning into large dandelion-like seed heads with many small, parachute-borne seeds. All parts of salsify bleed a milky white sap when damaged.

The entire yellow salsify plant is edible. The roots are best harvested from young plants in early spring or late fall. The leaves should be harvested before the plant flowers and are easily harvested at the same time as the



Salsify flowers, while beautiful, signal the end of the road for this biennial plant.

ADDING WILD EDIBLES TO YOUR DIET REGULARLY IS HEALTHY AS WELL AS A POTENTIAL BUDGET-SAVING MEASURE, CUTTING THE GROCERY BILL A BIT.



Salsify roots are best harvested early or late in the season from first-year plants.

roots. Flower stalks and buds should be harvested while tender before going to seed.

The roots are mild in flavor and best cooked. For more fibrous roots, it can be helpful to slow-cook them by boiling or roasting them at a low temperature. Salsify is cultivated for its edible root in some parts of the world and would do well in garden spaces with loose, rich soil. Cultivated roots will be larger and more tender than their wild counterparts. The leaves are edible raw, but cooking them brings out the best flavor and texture. The narrow tips become crispy while the wider bases soften and become slightly sweet. The shoots and flower buds are good raw or cooked and become crispy and delicious when lightly cooked in fat. The open flowers are also edible and make a pretty garnish or can be dipped into a light batter and fried to make flower fritters. The seeds can also be eaten as a grain; however, they are small and labor-intensive to collect.

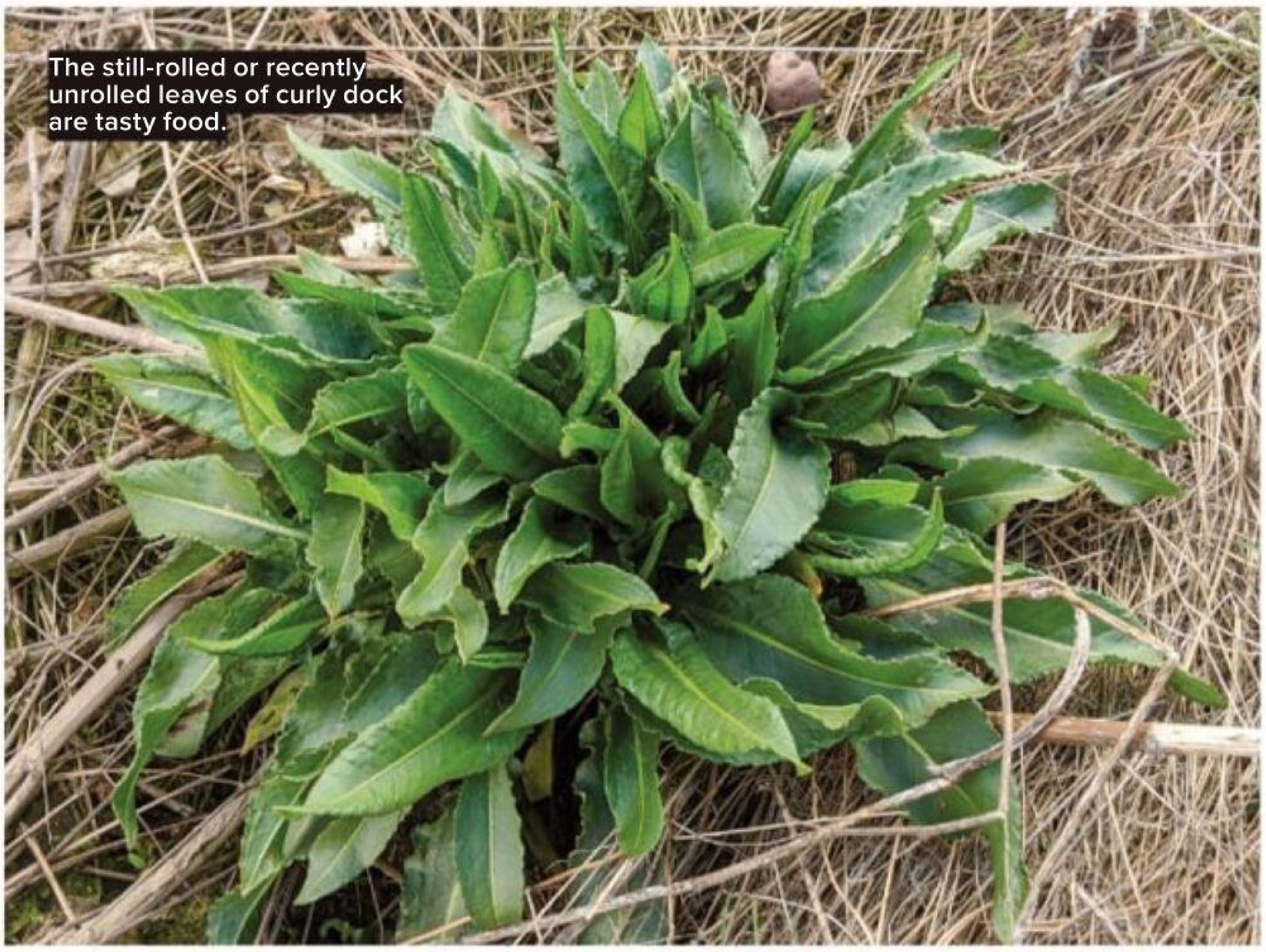
CURLY DOCK

Curly dock (Rumex crispus) is a widespread perennial that grows as a rosette from a large, bright yellow, forking taproot. The leaves start as a tightly rolled tube and unroll from the middle out as they mature. They are smooth and slightly succulent, and have wavy or curly edges. The leaf bases are wrapped in papery sheaths filled with clear slime. The flower stalks have some sparse leaves and, eventually, clusters of flowers and fruits. The flowers are three-sided and encase a small fruit. These eventually transition from yellow to reddish and then dry to a rusty brown. The brown stalks can often remain on the plant through winter, which makes them easy to recognize.

The leaves are best harvested when young, tender, and still partially rolled or recently unrolled. Recently unrolled leaves will have vertical creases running up them and stretch slightly without tearing. The papery sheath and slime at the base of the leaves are harmless and can easily be washed away if desired. The flower stalks should be harvested well before flowering. The seeds can be harvested after the flower stalk has dried. The root is inedible but is sometimes used medicinally.

All the vegetative parts of curly dock have a tart flavor from higher levels of oxalic acid. Oxalates can cause issues for some people, so moderation is advised. Cooking helps reduce oxalate content but does not completely remove it. The leaves are best as a cooked green. Large, tender ones can be stuffed with meat or grains and baked in a sauce like cabbage rolls. The leaf stems and young flower stalks make a decent substitute for rhubarb, which is in the same family as curly dock. The seeds and attached flowers can be dried and ground into flour. Some find the seeds and flowers to have a bitter flavor. Lightly roasting and mixing them with wheat flour can help mellow the taste.

These four species are some of the most commonly found edible plants, but many others are also worth foraging for. Depending on the region, dozens or hundreds more pesky yard plants could be on your plate instead of in the trash or compost.


The still-rolled or recently unrolled leaves of curly dock are tasty food.

TOXIC LOOK-ALIKES

Anyone interested in eating wild foods must follow the first rule of foraging: Never eat any wild food until you're 100% confident that you've identified it correctly. This rule is essential even for common garden weeds because some of them have toxic look-alikes. Purslane can often be found growing next to the toxic spotted spurge (Euphorbia maculata). This plant is easily differentiated from purslane by its slightly hairy, non-succulent leaves and the white sap it bleeds when damaged. Lambsquarters can sometimes grow with similar-looking plants in the nightshade family, Solanaceae, some of which are toxic. Curly dock can grow in the same habitats as the toxic houndstongue (Cynoglossum officinale). Houndstongue has rough, fuzzy leaves that lack the papery sheath and slime. It also has purple to red flowers and small, disc-shaped seeds that stick to clothing and fur.

Orion Aon is an author, forager and wild food educator from Colorado. He has over 20 years of foraging experience and has been teaching others about foraging since 2015 through his business, Forage Colorado, where he offers classes and creates educational content about wild foods. Learn more at foragecolorado.com.

CHAPTER 2

HOMESTEADING

SELF-RELIANCE CAN BE A LOT OF WORK, BUT THE REWARDS MAKE IT WORTH ALL THE EFFORT.

USING THE ENTIRE BIRD

It's not over till it's over

BY ANGELINE HAWKES

IN 2023, CHICKEN CONSUMPTION SURPASSED BEEF CONSUMPTION IN THE UNITED STATES, WITH THE AVERAGE PERSON EATING 99.6 POUNDS OF CHICKEN ANNUALLY. THOSE DINNERS YIELD LOTS OF BONES AND OTHERWISE THROWN-AWAY PARTS OF THE BIRD.

YOU MIGHT BE SURPRISED JUST HOW MUCH YOU CAN GET OUT OF THIS!

The big dinner for the entire family is just the beginning.

Utilizing the entire bird, be it chicken or turkey, maximizes both the cost-effectiveness of the purchase and the health benefits of the poultry. With a little planning, you can serve dinner, make and preserve broth for future use, and preserve the leftover meat so nothing is wasted.

THAWING

There are three methods of thawing recommended by the USDA: in cold water, in the microwave or in the refrigerator. Typically, you need to plan one day of thawing in the refrigerator for every 4-5 pounds of the bird's weight. Place the frozen bird in a shallow dish to catch melting liquid and place it in your refrigerator. To thaw the bird in water, place the entire bird in a sealed plastic bag or packaging, cover it in cold water, and rotate it and change out the water every 30 minutes until it's completely thawed.

OVEN-ROASTING

Cooking a turkey may seem intimidating. Just think of a turkey as a big chicken and the job won't seem so difficult. There are some differences in the two birds. Raw turkey skin is white to ivory and may have an undertone of pink or blue (this is determined by the fat), whereas chicken skin is ivory to yellow. Chicken skin color is mostly dictated by the feed the chicken consumes, and feed choice differs by region in the United States. If you're looking for a lower fat option, turkey usually is the lower caloric choice and has a higher ratio of unsaturated fat than chicken. Both birds need to be cooked to the proper internal temperatures to ensure the destruction of

You can thaw frozen poultry with water, but it's best to let it slowly thaw in the refrigerator.

RINSE ALL POULTRY WELL BEFORE COOKING, AND DON'T FORGET TO WASH HANDS!

bacteria. Bacteria such as Campylobacter jejuni, E. coli, Listeria monocytogenes, salmonella and Staphylococcus aureus may be present in undercooked, raw or contaminated poultry. Chicken and turkey should be cooked to a minimum internal temperature of 165 F (use a meat thermometer inserted into the thickest portion of the breast and the meatiest portion of the thigh).

Homemade chicken broth can be used for soups or canned for later.

ROASTING THE BIRD

While prepping the chicken or turkey, preheat the oven to 400 F to 425 F. Place the bird in a roasting pan, breast side up. Add about 1 cup of water to the bottom of the roasting pan. Some turkeys come outfitted with a plastic "hook" in the forefront of the cavity to insert the legs into to hold them into place. This also helps contain stuffing in the cavity. Stuffing the bird will add cooking time to the process and is a personal preference. Place the pan, preferably with a lid (or cover the bird with aluminum foil), in the oven for 15 minutes and then reduce the temperature to no lower than 325 F. (Cooking at a higher temperature speeds up cooking time slightly and gives the bird a golden, crispy outer skin, but cooking between 325 F and 350 F will keep the meat juicy and tender.) Basting the skin during cooking with drippings, broth, butter, maple syrup or seasonings is optional. Many turkeys and some chickens come in packaging printed with suggested cooking times. A stuffed bird will take longer. When it's about 30 minutes from the estimated time of completion, remove the lid or foil from the bird and allow the skin to brown. Test the bird with a meat thermometer before removing it from the oven. Butterball recommends checking a stuffed bird's internal temperature with a meat thermometer in three places: 170 F in the breast, 165 F in the stuffing, and 180 F in a thigh to check for doneness. Insert the thermometer into the meatiest area of each section. Allow the bird to cool to the point of safe handling, then remove it from the roasting pan and serve.

DON'T TOSS THE CARCASS

After you finish carving the meat from the bones of the chicken/turkey, what do you do with the bones? Most people toss the carcass in the trash. But there's more to be done with "them bones!" Put the bones, skin, odd bits of wing, giblets, vegetable peels, onion tops and scrap vegetables into a large pot and cook those bits of unwanted bird into healthy, delicious broth. Broth can be frozen or pressure canned and used in recipes instead of sodium-heavy store-bought broth, used to make soup, or consumed as is. Chicken broth remains the most popular broth variation in the United States. It touts higher amino acids than beef broth, and has a lower fat content than beef or turkey broth. For more nutrient-dense broth, however, go with the turkey. Broths have been proven to assist in hydration, improve sleep (broth contains the amino acid glycine, which is a sleep aid), reduce inflammation (amino acids again) and can be a part of a weight-loss plan (sipping broth is a healthy way to feel full for a longer period of time).

Here's a simple broth recipe. Add 1 gallon of water to a large pot. Place up to 4 pounds of carcass, bones, skin, vegetable peels and tops, leftover vegetables, herbs, and fresh or canned vegetables into the water and bring the mixture to a boil. Lower the heat and simmer for 12 to 24 hours. Add more water as the broth boils down if desired. Seasoning can be added, but if preserving the broth for use in recipes, it's best to leave it unseasoned. When the broth has cooled to a safe temperature, strain it through a sieve to remove the solid ingredients. Store broth in the refrigerator for up to three days.

Vacuum-sealed bags will preserve the meat longer, but it will still need to be frozen.

HOW TO MAKE GRAVY FROM BROTH

The golden rule for gravy making is a ratio of 3:2:1: 3 tablespoons of flour (or cornstarch), 2 tablespoons of fat (such as butter or lard), and 1 cup of liquid (hot broth, drippings, water, milk or a combination). This will yield about ¾ to 1 cup of gravy. This gravy recipe is very flexible, and you can use a little of this and a little of that to equal what you need in each category. Play around with the ingredients to find what works best.

To start, in a pan or skillet melt the fat over low heat, then mix in the flour a little at a time to create a roux. Whisk until it is smooth. Constantly watch for scorching. Slowly add hot broth and/or other liquids to the roux, whisking constantly. Cook over low heat until the gravy begins to reduce in volume and thicken. Season with salt and pepper. It's possible to make gravy without the fat content, but it takes longer to thicken.

FREEZING

Cooked poultry and broth can both be frozen. Meat should be de-boned and shredded, cut into portions, or cubed and placed into freezer-safe plastic zip-close bags or freezer containers. Be sure to date the container and consume the broth within six months. To freeze broth, pour fully cooled broth into freezer-safe zip-close bags, food-safe plastic jars (peanut butter jars work great!) or glass canning jars (not recycled grocery store jars, which may shatter when frozen). Do not fill the jar all the way. Room must be left to allow for expansion when the broth freezes.

Never try to dehydrate raw poultry, as it isn't safe.

ONCE DRIED, IT CAN BE MADE INTO A POWDER TO ADD TO SOUPS OR GRAVIES FOR FLAVOR!

DEHYDRATING POULTRY

Only dehydrate cooked poultry to ensure bacteria aren't present. Shred, cube or dice the poultry. Place the meat on dehydrator trays (or on a baking sheet if you're dehydrating in the oven). If your dehydrator has a temperature gauge, and many don't, set the temperature to between 145 F and 165 F. If dehydrating in the oven, set the temperature to between 200 F and 250 F, and be prepared to leave the door open a crack. Both dehydration methods take between five and seven hours, and sometimes longer. Check your meat frequently. When it's fully dehydrated, store it in airtight containers. Dehydrated poultry may also be pulverized in a coffee grinder or similar appliance to create a powder. This poultry powder may be added to soups, gravies and other dishes to add chicken or turkey flavor, as well as protein.

Keep cooked poultry in the freezer for soups.

PRESSURE CANNING

Meat and broth must be canned in a pressure canner. Water bath canning methods do not reach high enough temperatures to kill bacteria. You need to reach 240 F for safely canning meat. Water bath canners can only reach a maximum of 212 F. Rewarm cooked meat by bringing it to a boil in broth or water. Place the hot meat into canning jars and cover with hot broth or water. Proceed with the proper pressure canning procedures. It's very handy to have canned meat and broth in the pantry for recipes!

Angeline Hawkes writes for *Backwoods Survival Guide*, *Backwoods Home Magazine*, *Prepper Survival Guide*, *Self Reliance Magazine* and others. Visit her YouTube channel, Canterbury Trails Farm: youtube.com/c/CanterburyTrailsFarm

Borax
Powder
All Natural
Sodium Borate
2CUPS
1½
1CUP
½

FOR BEST RESULTS, STORE IT OFF THE FLOOR AND IN COOL AND DRY CONDITIONS!

If the only place you've used borax is in the washing machine, you've been missing out.

16oz
1 PINT
1⅔
12
1⅓
8
1 CUP
⅔
4
⅓

IT'S NOT JUST FOR LAUNDRY

Multiple uses for borax in your household

BY BERNIE CARR

IT'S GENERALLY KNOWN AS A GREAT LAUNDRY BOOSTER, BUT DON'T LET THAT MISLEAD YOU. I RECENTLY STARTED EXPLORING USES FOR BORAX IN THE HOUSEHOLD, AND WAS FASCINATED BY WHAT I FOUND.

Borax is a dry, white, powdery substance, usually found in dry lake beds where mineral deposits remain after the water evaporated. Other names for borax include sodium borate, sodium tetraborate or disodium tetraborate. It is composed of boron, sodium and oxygen. Borax was known to be traded along the Silk Road for 500 years but rose in popularity in the 1880s when it was discovered in Death Valley. The "20 Mule Teams" used wagons to haul borax out of the desert to be used in manufacturing and various products.

Borax is not to be confused with boric acid. Both are compounds that contain the element boron. However, boric acid is a type of weak acid commonly used in pesticides.

CLEANING

A simple mixture of borax and water can be an effective cleanser for most surfaces. Here is the basic recipe.

You will need:

- 2 tablespoons borax
- 12 ounces water
- 12-ounce (or larger) clean spray bottle (washed well)
- 10 drops of your favorite essential oil (optional)

In a glass bowl or measuring cup, mix the borax and water until the solid particles are completely dissolved. Pour the mixture into a clean spray bottle. If you want fragrance, add the essential oil.

This mixture can be used as an all-purpose cleanser to clean countertops, mirrors, glass windows, porcelain fixtures and fiberglass. You can also spray it into the air to eliminate odors. Avoid spraying it near your eyes or mouth. Keep it away from children and pets.

> **BORAX IS FAIRLY INEXPENSIVE AND IT DOESN'T TAKE MUCH TO GET THE JOB DONE, WHATEVER IT IS THAT YOU'RE WORKING ON .**

Here are some other cleaning tips using borax.

- **Tub, tile and shower** Sprinkle a little dry borax directly on surfaces and scrub it with a moist sponge to clean without scratching. Rinse well.

It works great on tile and grout, whether on walls or floors.

Borax is excellent for cleaning pots and pans, and it won't scratch nonstick surfaces, either.

Borax will deter ants, beetles, cockroaches and more.

Toilet bowl Pour ¼ cup of borax, ½ cup of white vinegar and 10 drops of essential oil into the toilet bowl. Scrub the bowl and rim with a toilet brush, then flush. If the bowl is heavily stained, you'll need to allow extra cleaning time. Empty the toilet bowl of water. Sprinkle borax directly on the stained areas. Leave it to sit for six to eight hours. Turn the water back on and brush the areas that need the most cleaning. Flush the toilet.

Mold killer Borax is effective in eliminating mold. Stir together 1 cup of borax and 1 gallon of water until the borax is dissolved. Pour into a clean spray bottle and spray anywhere you see mold growing. Let it sit for 15 to 30 minutes. Brush or wipe the area.

Refrigerator cleaner and deodorizer Mix 1 tablespoon of borax with 4 cups of water. Dip a sponge in the mixture to wipe up dirt and debris from fridge and freezer surfaces.

Sink stain remover Whether you have a porcelain or stainless steel sink, borax can be used to remove stains without scratching. Make a paste with 1 cup borax and ¼ cup lemon juice and clean with a sponge. Rinse well.

Tile grout Make a paste with borax and water and use a brush to remove dirt and stains.

Drain and garbage disposal Freshen up your garbage disposal and drain by pouring in 2 tablespoons of borax. Let it sit for 15 minutes then run the garbage disposal or rinse the drain with warm water.

Unclog sluggish drains Pour ½ cup of borax down the drain, followed by 2 cups of boiling water. Leave it alone for 20 minutes, then pour in more hot water. Repeat this process until the drain is clear.

Dishwasher To clean your dishwasher, load it as usual and sprinkle

¼ cup of borax throughout the bottom of the dishwasher. Use your usual dish detergent and run the dishwasher in your preferred setting.

- **Cookware** Sprinkle borax directly on pots and pans and scrub with a sponge. Your cookware will shine without scratches.

- **Trash can** To sanitize and freshen a trash can, fill it halfway with water. Add ½ cup of borax. Let it sit for 1 to 2 hours. Swirl the water around, then discard. Let the trash can air-dry.

- **Carpet cleaner** Remove carpet odors by sprinkling borax lightly on the carpet. Leave it alone for an hour, then vacuum. Deep-clean your carpets using ½ cup of borax per gallon of water in a carpet-cleaning machine.

- **Floors** To clean tile or vinyl floors, dissolve 2 tablespoons of borax in 4 cups of warm water. Stir well until no solids remain. Apply the mixture using a mop. To spot-clean your floors, pour the mixture into a spray bottle.

LAUNDRY

You can save money by making your own laundry detergent.

BORAX IS SAFE AROUND PETS, AS LONG AS THEY AREN'T ALLOWED TO INGEST IT!

To remove odors, sprinkle borax on the carpet and let it sit for about an hour, then vacuum well.

You will need:

- Box grater
- 1 bar Castile or Fels-Naptha soap
- Air-tight container
- 2 cups borax
- 2 cups washing soda
- 2 cups baking soda
- Essential oil (optional)

Wear a face mask to avoid inhaling the powders as you work. Using the grater, finely grate the soap. You should end up with about 2 cups. Place the grated soap in the air-tight container.

Add the borax, washing soda and baking soda to the grated soap. Mix well. If you prefer a scented detergent, add ½ teaspoon of essential oil to the mixture. Mix again. Seal and label the container.

To use, measure 4 tablespoons of the mixture per load of laundry. Adjust the quantity according to your preference.

Borax naturally breaks down stains without damaging clothes. For a presoak, add ½ cup of borax to 3 gallons of water in a bucket. Soak the stained clothes in the water for an hour, then wash as normal.

PET BED FRESHENER

Mix ⅓ cup of borax with 1 cup of water until dissolved. Place the mixture in a spray bottle. Spray on your pet's bed and blankets to freshen them until the next washing. Allow it to dry before allowing your pet to use it.

PEST CONTROL

Kill fleas by sprinkling borax on carpets and anywhere you think fleas are hiding. Let it sit for an hour then vacuum thoroughly.

Deter pests such as ants, beetles, cockroaches and water bugs by sprinkling borax over cracks or crevices where bugs congregate or enter your home.

FLOWER PRESERVATIVE

Mix 1 cup of borax with 1 cup of cornmeal. Sprinkle the mixture in a box or your preferred covered container. Place the flowers you'd like to preserve in the box. Sprinkle with more of the borax and cornmeal mixture and cover the box. Let it sit undisturbed for 2 weeks or until the flowers are dried.

Now that you know about its multiple uses, why not give borax a try? You'll be amazed!

SAFE HANDLING

Although borax is a natural product, you still need to use caution while using it. Borax can cause mild irritation to the skin and eyes and can be toxic if ingested. Never take borax internally and always keep it away from children and pets so they can't ingest it.

According to the Environmental Protection Agency, you should wear gloves when handling borax, avoid getting it near your eyes and always use it in a well-ventilated space.

If you get in your eyes, remove any contact lenses, gently hold your eyes open, and rinse your eyes for 15 to 20 minutes.

If you get it on your clothing, remove and wash the affected clothes. If you get it on your skin, rinse the area well for 15 to 20 minutes.

If a person inhales it, move the patient to fresh air, call 911 then give artificial respiration, if possible—preferably mouth-to-mouth resuscitation.

If anyone accidentally swallows borax, call the U. S. Borax 24-hour medical emergency number (1-866-334-3571), a poison control center or a doctor for treatment advice.

Do not mix borax with other household cleaners.

Bernie Carr is the founder of apartmentprepper.com, a blog about family preparedness in an apartment setting. Her books include *The Prepper's Pocket Guide: 101 Easy Things You Can Do to Ready Your Home for a Disaster*, *Jake and Miller's Big Adventure*, *The Penny-Pinching Prepper* and *How to Prepare for Emergencies on a $50 Budget*. Her latest e-book, *Frugal DIY*, is available on Amazon.

GOING

Breads aren't difficult to make, as long as you follow instructions and take your time.

SOUR

Getting started with wild yeast

BY ALICE JONES WEBB

BREAK OFF A CHUNK OF THIS LOAF, SPREAD ON A BIT OF BUTTER, AND YOU'LL BE IN HEAVEN!

Stretching and folding sourdough develops strength and structure in the final product.

SOURDOUGH HAS BEEN AROUND FOR ABOUT AS LONG AS HUMANS HAVE BEEN BAKING BREAD. ARCHAEOLOGISTS AND HISTORIANS BELIEVE SOURDOUGH'S WILD YEAST FIRST LEAVENED THE BREAD OF ANCIENT EGYPT SOME 5,000 YEARS AGO.

From there, it spread gradually throughout ancient Greece and the Roman Empire before expanding across Europe. By the early 19th century, wild sourdough cultures had primarily been replaced by baker's yeast.

Sourdough bread has experienced a resurgence in popularity in recent years, its fame primarily fueled by the 2020 COVID-19 pandemic. As everyone from rural grandmothers to young urban professionals was confined and anxious due to nationwide shelter-in-place orders, people turned to bread-making in droves, so much so that baker's yeast disappeared from grocery store shelves faster than toilet paper. Denied commercial yeast and craving the homey comfort of warm, oven-fresh carbohydrates, the masses plowed into sourdough, which relies on a simple starter of flour and water fermented by wild yeast and Lactobacillus bacteria.

Its distinct tangy flavor, chewy texture and artisanal appeal have helped sourdough retain its popularity among home bread makers long after executive orders were lifted. But sourdough baking is about more than baking bread; it's craftsmanship, tradition and the patience required to cultivate and keep alive a living culture.

UNDERSTANDING SOURDOUGH

Sourdough is a natural leavening agent made from a simple mixture of flour and water. Unlike commercial yeast, which uses a single strain of yeast bred for rapid fermentation, sourdough starter is a culture of wild yeast and lactic acid bacteria. These microorganisms live naturally in flour and the air in your kitchen. Once you combine flour and water and let them sit, those microscopic organisms thrive and multiply. With time and care, a stable population develops. When used to bake bread, the microorganisms perform fermentation reactions, producing the gas that makes the dough rise and the molecules that produce that signature sourdough flavor.

STARTING YOUR STARTER

Delving into the world of sourdough can feel intimidating for the uninitiated. Although the process is straightforward, sourdough fanatics seem to speak a foreign language. To make matters worse, the internet is full of conflicting guidelines and advice. From feeding frequency and ratios to flour selection, sourdough experts regularly defend their way as the only proper way to make sourdough.

The truth is, sourdough starters are a lot like children. There's no one right way to raise them. While you can follow a detailed step-by-step guide to creating a healthy starter, every starter is different. Some bakers even name their starters (I call mine "Dough-lene") and claim they have their own preferences and personalities.

Unlike with most other recipes, when making sourdough bread, it's OK to deviate from the plan when it isn't working. Sourdough baking actually takes some intuition, and the best way to develop a solid sourdough instinct is to jump in and get some flour on your hands. Take comfort in knowing that it's pretty hard to kill a sourdough starter. I had one that lived in the back of my fridge for years that I seriously neglected. I only fed it when I wanted to make a fresh loaf of bread, which was only about once a month. His name was Stanley, and he lived for years, never failing to rise to the occasion whenever the family needed a fresh loaf.

Here's a simple method to kick-start your sourdough journey:

1 In a clean glass jar, combine equal parts of unbleached all-purpose or whole-wheat flour and water by weight (50 grams of flour and 50 grams of water is a good starting point).

2 Stir until well combined, ensuring no dry flour remains.

3 Cover the jar loosely with a clean cloth or waxed paper. It needs airflow, so don't seal it tight.

4 Place the jar in a warm spot in your kitchen, ideally around 70 F to 75 F. If your kitchen is typically colder, place your jar in the oven with the light turned on.

5 Every 24 hours, discard half of the starter and feed it with equal parts of flour and water by weight.

6 Within 5 to 7 days, your starter should become bubbly, fragrant, active and ready to leaven bread.

MAINTAINING YOUR STARTER

Once your starter is established, it needs regular care to stay healthy and active. Here are some tips for maintaining your sourdough starter:

- Feed your starter daily, or refrigerate it and feed it weekly if you won't be baking.

You have to let the dough rest before stretching it.

HANDS DOWN, THE BEST WAY TO LEARN IS TO DIVE RIGHT IN AND GIVE IT A WHIRL!

- To feed your starter, remove half of the starter (you can use that half to make bread, toss it in the compost, or use it in yummy “discard” recipes like pancakes, crackers and brownies) and add 50 grams of flour and 50 grams of warm water to the remaining starter. Mix together until well combined.
- Keep your starter in a clean jar and stir it occasionally to redistribute the yeast and bacteria.
- If your starter develops a layer of liquid (this is called “hooch” and is a byproduct of the alcohol production in your starter) on top, it’s a sign that it’s hungry. Simply stir the liquid back in and feed your starter.

MAKING SOURDOUGH BREAD

Once you have a vibrant starter, it’s time to make some bread.

What you’ll need

- 350 grams water
- 100 to 150 grams active, bubbly sourdough starter
- 500 grams bread flour
- 10 grams salt

1 In a large mixing bowl, combine the water and sourdough starter, stirring until dissolved.

2 Add the flour and salt to the bowl and squish together with your hands until a shaggy dough forms. (Note: It won’t look like bread dough just yet.)

3 Cover the bowl with a clean cloth and let it rest and rise for 30 minutes.

4 After the dough has rested, perform a series of stretches and folds every 30 minutes for 2 to 3 hours. This will serve to help the dough develop needed strength and structure.

5 Once the dough is smooth, elastic and slightly puffy, transfer it to a lightly floured surface. Starting at the top, fold the dough over toward the center. Give it a slight turn, and then fold over the next section of dough. Repeat until you have come full circle and you have a well-formed round boule.

6 Place the shaped dough, seam-side up, into a floured proofing basket or bowl lined with a cloth.

> UNLIKE MANY OTHER TYPES OF BAKING, WHEN YOU’RE WORKING WITH SOURDOUGH, YOU CAN DEVIATE FROM THE PLAN A BIT AS NEEDED.

HEALTH BENEFITS OF SOURDOUGH

The slow fermentation process of sourdough bread results in a pleasantly tangy flavor, complex aroma and chewy texture that many people find more satisfying than conventional bread. However, there are more benefits of sourdough than just the enjoyable culinary experience. Sourdough bread offers several health benefits compared to traditional bread made with commercial yeast.

Easier Digestion

The fermentation process involved in making sourdough bread breaks down gluten and phytic acid, making it easier to digest, particularly for individuals with gluten sensitivities or those who struggle with digestive issues. Studies also suggest that sourdough fermentation may produce prebiotics, a type of indigestible fiber that feeds the beneficial bacteria in your gut, improving digestive health.

Lower Glycemic Index

Sourdough bread typically has a lower glycemic index than conventional bread. The fermentation process breaks down complex carbohydrates into simpler sugars, reducing the bread’s glycemic index and slowing the rate at which glucose enters the bloodstream. Several studies have compared blood sugar increases in individuals after eating sourdough bread and bread made with baker’s yeast. Results showed that after eating sourdough bread, individuals had lower blood sugar and insulin levels than those who ate bread made with traditional baker’s yeast.

More Nutritious

Although sourdough and other types of bread are often made with the same flour, sourdough’s fermentation process helps to increase the body’s absorption of certain nutrients. By reducing phytic acid content, sourdough bread enhances the bioavailability of essential nutrients like zinc, iron and calcium.

There just isn't much that's better than a slice of warm, home-baked bread.

7 Cover the dough with a cloth and let it ferment and rise at room temperature for 8 to 12 hours.

8 After this second rise, and right before the dough goes into the oven, make a slash down the center of the dough with a serrated knife, paring knife, razor or bread lame. The slash allows steam to escape and the dough to expand.

You're almost done. The final stage of sourdough baking happens to be the most rewarding—baking your loaf to golden perfection.

Here's how to bake your sourdough bread:

1 Preheat your oven to 450 F with a Dutch oven inside.

2 Once preheated, carefully transfer the proofed dough to the hot Dutch oven.

3 Bake the bread with the lid on for 20 to 30 minutes.

4 Remove the lid and continue baking for an additional 20 to 30 minutes or until the crust is a deep golden brown.

5 Remove from the oven and transfer the loaf to a wire rack to cool completely before slicing. Be patient: If you cut into it too soon, the texture will be gummy.

While the process may seem daunting, with some time, experience and experimentation, anyone can master the art of sourdough. Whether you're drawn to the health benefits or the deep satisfaction of crafting fresh bread with your own two hands, sourdough baking can be deeply fulfilling.

Alice Jones Webb is a freelance writer, avid bowhunter, happy camper, survival junkie and freethinking rebel. She lives in rural North Carolina with her non-hunting husband, a co-dependent dog, and a well-stocked chest freezer.

CHAPTER 3

DIY PROJECTS

SELF-RELIANCE CAN BE A LOT OF WORK, BUT THE REWARDS MAKE IT WORTH ALL THE EFFORT.

WALKING STICKS

The outdoorsman's most versatile tool

BY TIM STETZER

Some folks choose to wrap the grip area of the stick, while others prefer a smooth or natural finish.

YOU'LL RARELY FIND ME IN THE WOODS WITHOUT ONE, AS ANYONE WHO HAS CAMPED OR HIKED WITH ME CAN ATTEST TO. PERSONALLY, I THINK IT'S AN INCREDIBLY VERSATILE TOOL AND A NEARLY INDISPENSABLE ITEM WHEN YOU HIT THE TRAIL.

Hiking sticks serve a number of purposes on a day hike or a multiday backpacking trip. A good stick provides balance when you're carrying a heavy pack. It also gives you an added point of contact with the ground when going up or down hills, traversing muddy trails, or crossing streams or loose rocks and logs. You can use it to check your footing before you put your boot down. It's a great probe to find out if there's anything creepy and crawly waiting for you under those rocks or on the other side of the log as well.

When you're not moving, it comes in handy as a spare tarp pole, to lift pots off the fire, or as a place to hang your jacket and keep it off the ground during a break. It can also be an impact weapon that you can always have in hand on the trail, just on the off chance you run into two- or four-legged pests. Basically, the walking stick's versatility is limited only by your imagination.

All you need are a few simple tools to harvest your stick and customize it to suit your needs.

The author attended a Nature Immersion course offered by the Nature Reliance School last fall. Hiking sticks were prevalent with the course attendees during the woods portion of the class.

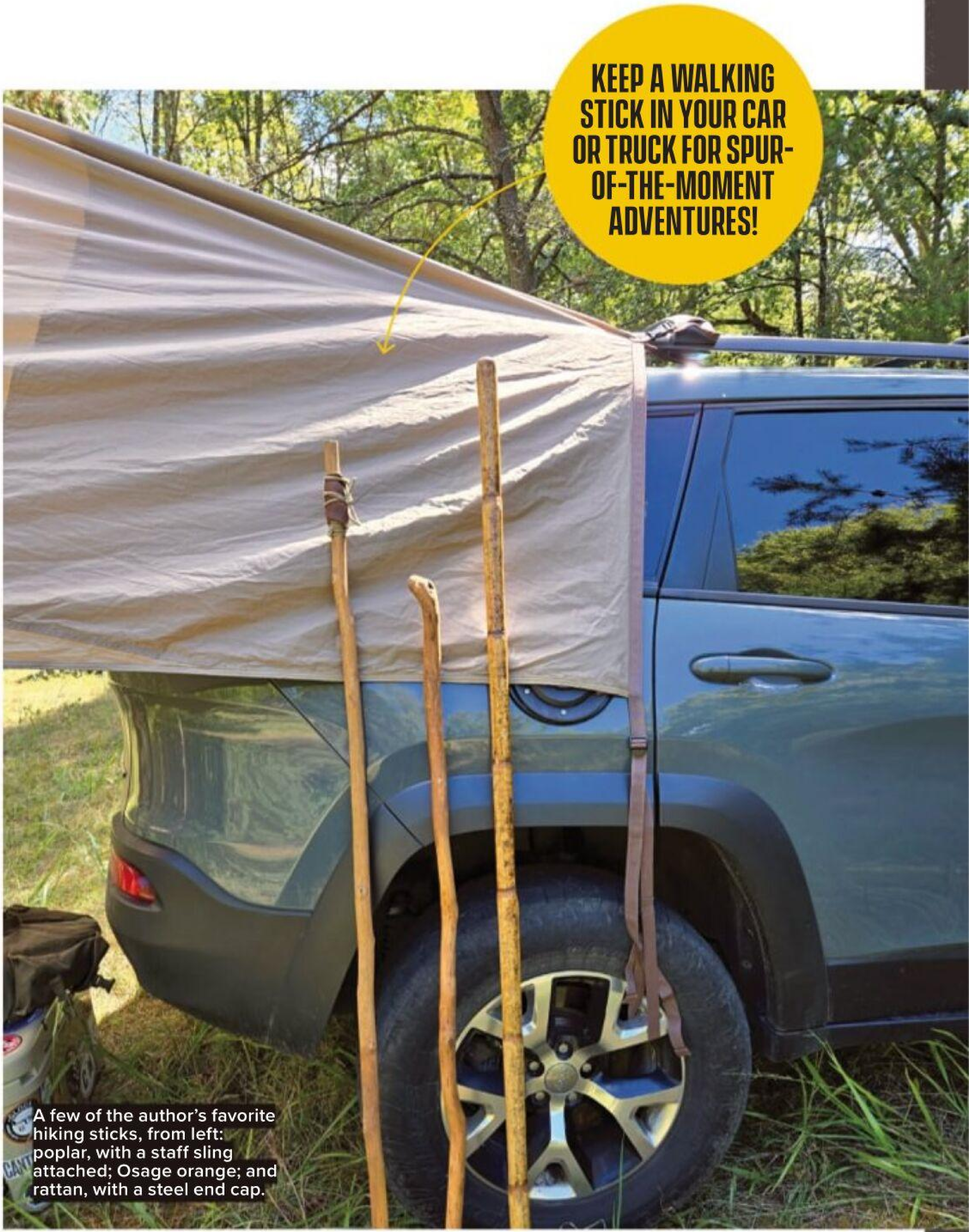
FIELD EXPEDIENT OR PURPOSE MADE?

A lot of folks, myself included, have used field-expedient, fresh-cut, green staffs, and they've worked fine. They'll do in a pinch, but you'll find that they're heavier than a properly dried staff. You can't always count on having permission to cut a fresh staff on every trip, either, or you may not be able to find a suitable candidate. You can always look at branches on downed trees as a source for walking sticks too. Many places allow cutting wood that's already on the ground, and if it's been there a while it may be dried already too. Just make sure it's not rotten and will support weight! So, trying to find one before you set out is an option, but it's not a guarantee.

Commercial trekking poles are popular items these days. They're high-tech, lightweight and I guess they work just fine. With that said, they just don't do anything for me. I much prefer a stick made of natural materials. You can either buy one, or harvest one yourself. I like to harvest them from the areas I hike, when permitted.

DIY APPROACH

What kind of wood should you use for your hiking stick? I've used a variety of materials over the years and a lot of things will work.



KEEP A WALKING STICK IN YOUR CAR OR TRUCK FOR SPUR-OF-THE-MOMENT ADVENTURES!

A few of the author's favorite hiking sticks, from left: poplar, with a staff sling attached; Osage orange; and rattan, with a steel end cap.

Optimally, the wood should be seasoned so that it won't split or crack. A stick needs to be stout enough to support your weight when you're leaning on it with a pack, or using it for leverage on the trail.

I've used rattan for years with great success. You aren't likely to find rattan growing wild, at least not in North America, but it's available from a variety of sources, especially martial arts supply shops. It makes for a great staff, being that it's very strong, but has some flex to it. It has a smooth finish to it as well, which keeps it comfortable when the staff moves in your hand as you walk. The density and mass make rattan a popular choice for impact weapons so you can use it defensively as well.

Bamboo is similar and is much lighter in weight. While it's still strong, it lacks the mass of rattan. This is OK if you're mainly looking for support and don't plan on whacking anything with it. A bamboo staff still gives you some standoff poking distance against critters or snakes if need be. You can find bamboo growing on some spots in the U.S., and you can get it in many garden stores.

Poplar is a wood I've used a lot. It's great for walking sticks, as its sapling tend to grow straight and tall. I let mine dry in the garage for about a year before I use them. Poplar is at the softer end of the hardwood spectrum and provides good strength without a lot of weight. I usually remove all the bark and then sand down the shaft of the staff so that there are no projections or hot spots to aggravate the hands while walking with the staff. Then I put a couple of coats of boiled linseed oil or tung oil on the wood to give it some weatherproofing.

Other woods will certainly work as well. Hickory is a popular option, and I've used maple as well. Any properly dried hardwood should do just fine.

SIZE MATTERS

I've found that the proper length of a hiking stick is a very personal issue. Some folks like shorter staffs that come just above waist level and let you grip the top of the staff. I prefer a longer, full-sized staff. Generally, I cut mine off between chin and eye level, and that seems to work well for me. A full-sized staff gives you more reach for poking and prodding stuff. It also gives you more leverage when you need the staff for support on a hill, or during a stream crossing.

Diameter is another consideration. It has to fit comfortably in your hand, so you want a thickness that feels right to you when you're carrying it and walking with it. You also want it to be thick enough to have some strength to it and to not crack, bend or split easily. Over the years, I've found that 1 to 1.5 inches is just about right for me. That thickness provides the comfort, strength and stoutness that I like in a walking stick.

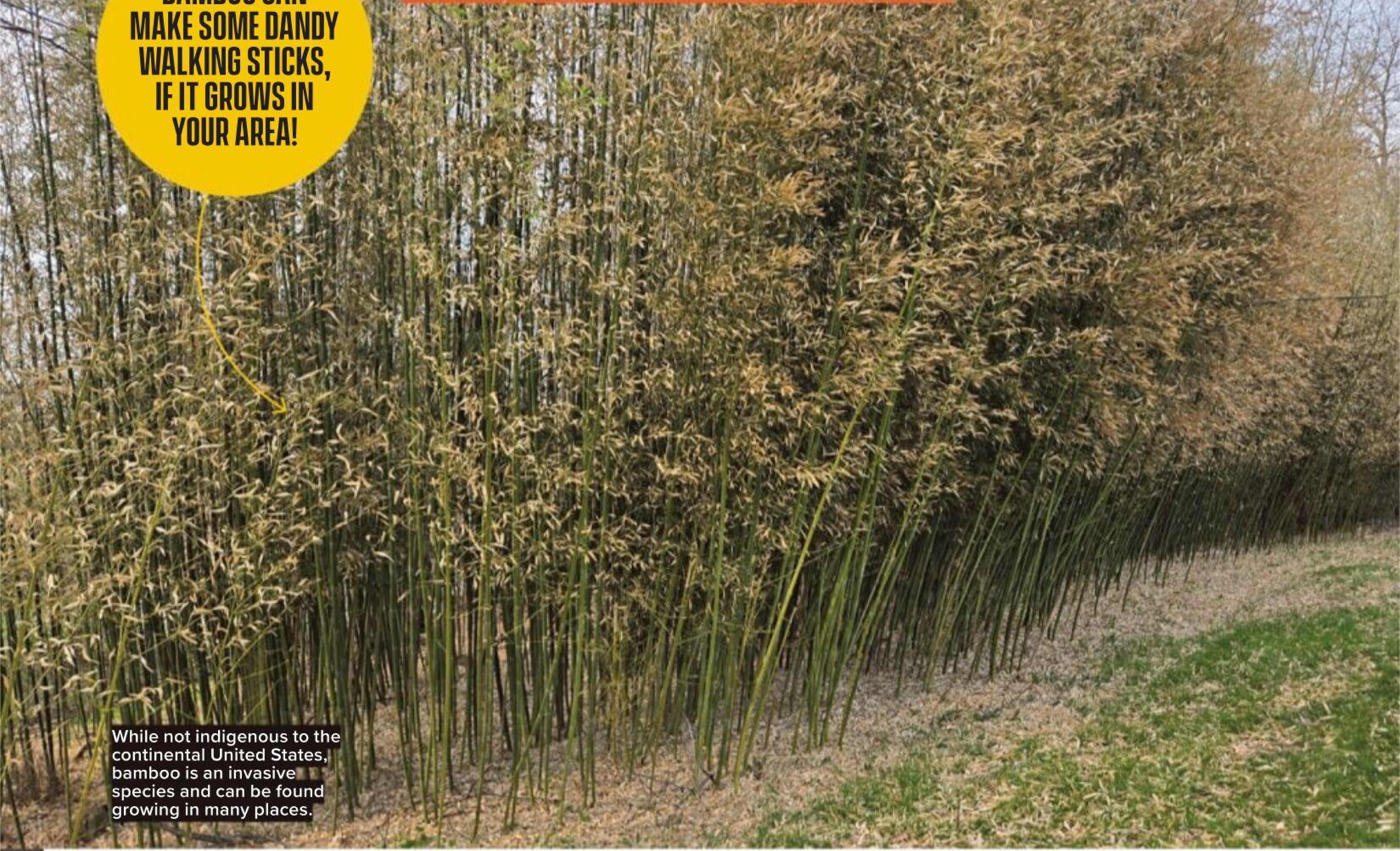
HARVESTING YOUR HIKING STICK

While you can certainly buy wood hiking sticks at craft shows, national park gift shops or similar places, I prefer to make my own. For a harvesting tool, I prefer a folding saw. I'll usually figure out how long I want the stick when I harvest it. That's a mixture of my preferences and how straight the stick is. It doesn't have to be broom handle straight, but it should be generally in line. Sometimes the curves or bends dictate where you need to cut your hiking stick.

Next, I use a knife or small ax to knock any branches off as close to the trunk as possible. From there, I use my belt knife to remove bark and smooth out any nubs from where the branches grew. Some folks leave the bark on but I generally prefer a smoother, cleaner finish. Often, it's easier to remove the bark when it's green, so even if I'm going to let a stick dry, I'll debark it first. Plus, it gives me something to do while I sit around the campfire.

END CAPS

Once you have a good, well-cured stick, they're generally pretty durable. The part that will show wear and tear is the butt of the staff. Constant impact on rocks and hard-packed trails can cause the butt of your staff to mushroom and crack over time. You can just live with it, trim off the damaged



BAMBOO CAN MAKE SOME DANDY WALKING STICKS, IF IT GROWS IN YOUR AREA!

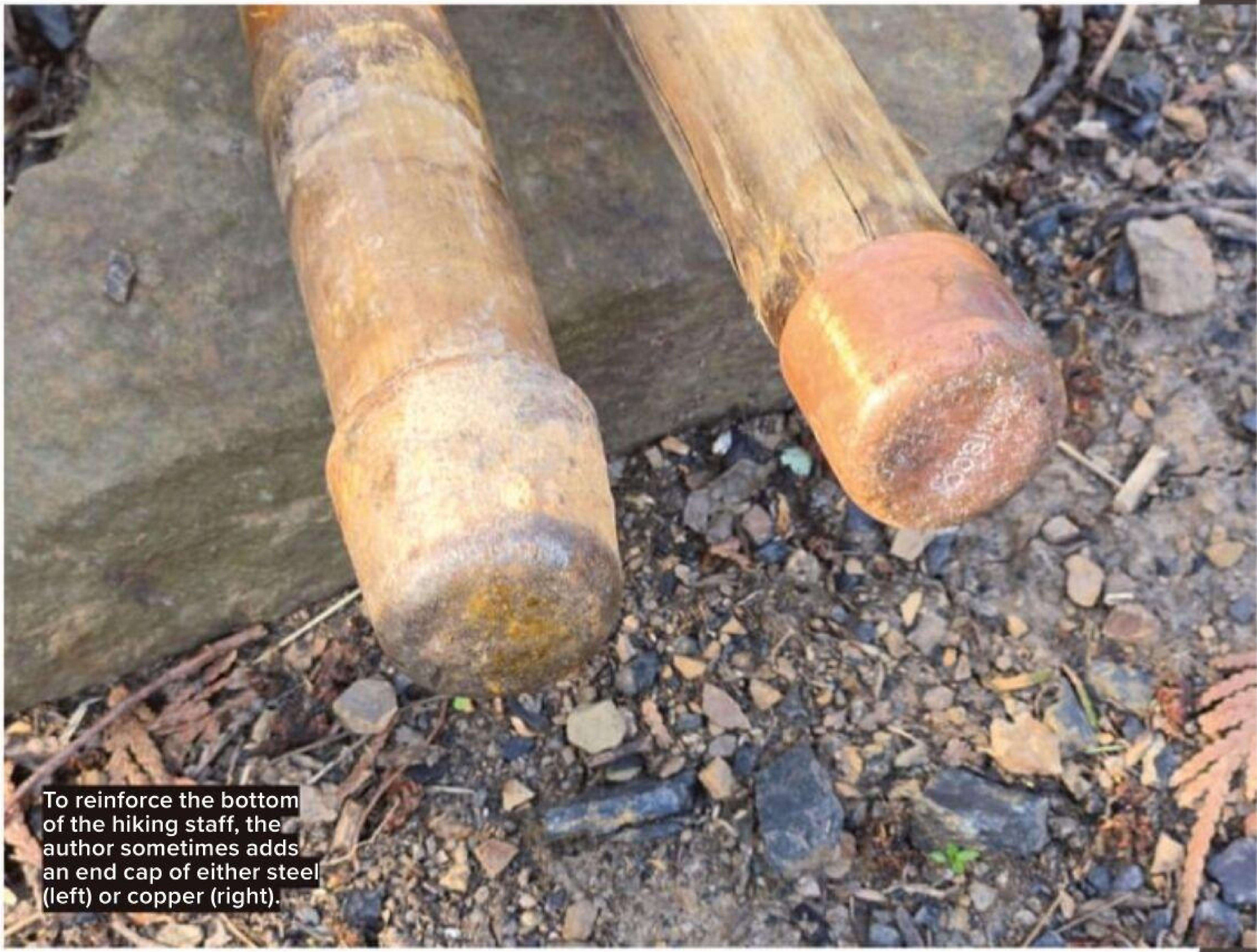
While not indigenous to the continental United States, bamboo is an invasive species and can be found growing in many places.

end occasionally (losing some length every time you do) or add a durable cap to your staff.

The easiest method I've found for protecting the end of a staff is to use a pipe end cap. They're generally only a couple of bucks at most hardware stores. I've used both steel and copper with equally good results. Steel is more durable, but it will rust and is a bit heavier. If you want something a bit lighter, then copper is an option. It won't rust, and is still more durable than a bare wood butt. Personally, I like the look of copper. It adds some character and a nice finishing touch to your staff.

I use a two-part epoxy like Devcon to secure the end cap in place. I sand down the staff so that the cap is a snug fit, and then apply the epoxy. If there's any seepage around the top of the cap, I just clean it up with a razor knife and some sandpaper once everything is dry.

While a lot of folks make do with a random stick they grab on their way into the woods, it doesn't take much to make one that will serve you for years to come. My oldest ones still in use are between 20 and 30 years old.



To reinforce the bottom of the hiking staff, the author sometimes adds an end cap of either steel (left) or copper (right).

One of the many useful things you can do with a long hiking staff is check the depth of creeks or streams before crossing.

Tim Stetzer lives in western Pennsylvania with his wife, two kids and too many cats. He has over two decades of law enforcement and criminal justice experience, and as a police academy instructor. He is also a veteran of both the Army and Air Force Reserves and has been an avid outdoorsman since his youth in Boy Scouts, where he first became interested in knives. Tim has written for various gun, knife and outdoors publications since 2006.

TRASH TO TREASURE

Repurposing for fun and profit

BY CECI HAMPSON-ELLIS

Pretty, functional—and would probably sell for a few bucks at a gift shop.

HAVE YOU EVER THOUGHT ABOUT HOW MUCH STUFF IS THROWN AWAY? THE AVERAGE AMERICAN TOSSES AWAY 4.4 POUNDS OF GARBAGE PER DAY. MULTIPLY THAT BY 3.9 PEOPLE IN A HOUSEHOLD, AND WE'RE NOW TALKING ABOUT THROWING AWAY 17.4 POUNDS OF TRASH A DAY. IN CASE YOU'RE WONDERING, THAT'S EQUIVALENT TO THE WEIGHT OF ONE ELEPHANT, OR 6,351 POUNDS, PER YEAR FOR JUST ONE FAMILY.

Want to ramp up your recycling? Unfortunately, many items that technically are recyclable aren't actually recycled. According to the Environmental Protection Agency, only 35% of our trash is recycled. While glass and metal can be recycled endlessly, other items, like paper and cardboard, degrade after several recycles. Additionally, recycling comes with energy costs, although it's usually half of what it costs to manufacture new. When it comes to plastics in the United States, only PET (No. 1) and HDPE (No. 2) plastic bottles are truly recyclable. Sadly, just 29% of PET plastics are collected for recycling, and out of that, because of contamination, only 21% of the bottles are actually made into recycled items. Many of the rest of the plastics (Nos. 3-7) are incinerated to generate energy.

What can you do? Many people have heard the slogan "reduce, reuse and recycle." Let's add one more: upcycle.

WHAT IS UPCYCLING?

Upcycling means finding new uses for things that add value to them above and beyond what you could get for simply recycling them. You can take something that would normally go to a landfill or a recycling plant—or just pollute the environment—and give it a makeover.

This is not a new concept. During the Great Depression, people reused jelly jars as drinking glasses and to can food; flour sacks made of cloth were turned into dresses; and wooden packing crates were used as building materials to make shelters and furniture. As a matter of fact, the jars and flour sacks were designed with these additional purposes in mind.

Nowadays, we don't often find cloth sacks for flour (although I do know a woman who makes aprons out of Tyvek animal-feed bags), and many jars, with a couple of exceptions, are not made to be reused.

However, interesting bottles and jars can be made into lamps and votive holders, while old

Don't be afraid to ask neighbors or friends for materials they might otherwise toss.

BECAUSE MANY OF THE MATERIALS ARE FREE, YOU CAN AFFORD TO EXPERIMENT.

Think outside the box and come up with some quirky uses for old junk.

clothing can be given a second life by cutting it down or adding new embellishments. Enrichment and foraging toys for pets can be fashioned from many things that are considered waste, like egg cartons, cardboard rolls from toilet paper and paper towels—even cellophane wrappers. Upcycling not only saves you money; it can also earn you money if you sell your crafted items.

In addition to making new items from refuse, you can also repurpose old furniture. For example, we were given an old TV armoire. It no longer houses a television set, but after adding a shelf and a wine rack, it now houses our "bar."

There are many sources for old furniture that's just begging for a makeover. Estate and yard sales, as well as second-hand stores, can yield old dressers, tables, nightstands and whatnot at very low prices. With a little elbow grease and some coin for materials, you can actually turn a small profit by selling your handiwork.

TAKE A LOOK AT SOME IDEAS

✖ Fabrics

Instead of tossing old clothing into the trash, you can cut down articles that have worn seams, and the resulting cloth can be used to make headbands, book covers, three-ply face masks and tote bags. You can cut down old men's shirts into smocks for kids or a stylish dress. Old jeans can become skirts. Old T-shirts can become dust rags. Small pieces of cloth, along with some clever embroidery, can become decorative patches for worn spots on other garments. My mom transformed many of our outgrown clothes that were too worn to pass on into memory quilts. Additionally, when the scraps are too tiny to use, provided they are 100% cotton, they can be put in the compost pile.

UPCYCLING IS A GREAT WAY TO BE CREATIVE AND HAVE SOME FUN WHILE ALSO LEARNING AND HONING SKILLS LIKE TOOL USAGE.

✖ Egg Cartons

I have made foraging toys for both cats and birds by cutting down cardboard egg cartons. I have also cut them to make flowers for mixed-media art projects. Those paper 2½-dozen egg trays are designed to be strong enough to protect those fragile eggs when they're stacked high in the store—so try stacking and gluing the empties to make tables and even seats. The cardboard can be dyed, painted or covered with foam padding and cloth for a more designer-style look. The plastic and foam egg cartons can be used for storing trinkets or sorting nuts and bolts (I don't recommend using them for pet toys, though).

Fabric scraps have endless uses for craft projects.

Cardboard Rolls

The tubes inside toilet paper and paper towel rolls can be fashioned into small gift boxes or foraging toys for pets (these toys will stop them from wolfing down food, and they'll get a little exercise, too).

Cellophane

Almost everything today comes encased in a cellophane wrapper. For some reason, my cats find the crinkly noise it makes utterly irresistible. They love it so much that they regularly fish cellophane wrappers out of the trash. You can make a cat toy from an old sweater or heavy long-sleeve shirt you no longer need or want. Cut 3-by-12-inch pieces. Fold in half lengthwise; stitch the long edge and one short edge. Turn it inside out, then stuff with cellophane wrappers and a bit of catnip. Hand-stitch the other end to close.

Glass

Wine bottles can be turned into accent lamps or even a chandelier. You'll need some specialized equipment for this. I purchased a couple of diamond bits for my Dremel tool. You'll also need a small string of lights (electric or battery-powered). Drill a hole near the bottom of the bottle large enough to fit the lights

Prices that are low but fair will keep customers coming back for more.

(if you'd like to keep the label intact, drill on the back of the bottle). Sand the hole, then push the lights through the hole. I've made holiday lamps from wine bottles, too. Remove the labels, then use holiday-scene or lettering stencils and spray-paint in holiday colors before drilling the hole (cover the hole with masking tape to prevent chipping the paint). You can also purchase LED corks that turn bottles into lamps.

If you have a good glass cutter and some electrical know-how, you can make chandeliers or pendant lamps from old glass bottles. Back in the day, my dad custom-made drinking glasses from 7UP bottles. He cut the tapered neck off and sanded the sharp edge smooth. We loved them, since none of our friends had any glasses like it.

When you have colorful tiles, glassware, plates or bowls that are cracked or chipped, instead of tossing them into a landfill, finish the job. Place the item between pieces of heavy canvas and use a hammer to smash it. You can use the pieces to cover a tabletop with a mosaic design.

If you find that upcycling is your thing, you can take it to the next level by actively seeking items to upcycle. Rebecca Hastings-McLaughlin is a friend of mine who has purchased abandoned storage units at auctions. She uses the website storagetreasures.com to bid on them. Often, she is able to make a profit by selling the items she finds. In fact, she was able to give up her day job to do this. She also uses maxsold.com to find estate sales. She suggests that you look at Goodwill and estate or yard sales to find furniture for upcycling.

One of the coolest projects she made was painting some old glass power-line insulators. They became party lighting for use with battery-operated tea lights, and she has also used some with solar pathway lights. Her best advice is: "Keep your eyes peeled and your mind open!"

SELLING YOUR PROJECTS

In order to figure out a sale price for an item you've upcycled, include the initial price you paid for the piece, plus any materials you used (parts, sandpaper, thread, etc.). You absolutely need to factor in your time, too.

Keep track of all your supply costs, including items that may be used on many projects. Try to calculate the cost per project. For example, if you used a half a can of paint on a project, factor half of the price of the can in your per-project cost.

When pricing painted furniture, keep in mind how much time you spent on the piece. For example, a project that took 48 hours to complete will command a higher price than one that only took two hours. You should calculate an hourly wage that makes sense for the amount of time and effort spent on the project.

Also remember that if you price furniture or other projects too low, you may give the impression that your work is not the best quality. On the other end of the spectrum, if you set the price too high, you may scare off potential customers. Remember that it's easier to lower your price later if your work isn't selling well than it is to raise it if a piece quickly gets too much interest, and you regret the low price.

AUTHENTIC HANDMADE AX HANDLE

It's a ton of work, but the payoff is fantastic

BY CRAIG CAUDILL

A WELL-SHARPENED AND ADJUSTED AX IS ESSENTIAL FOR SIGNIFICANT OUTDOOR TASKS. AN AX HANDLE CAN SERVE YOU FOR DECADES WITH THE CORRECT CONSTRUCTION AND MAINTENANCE.

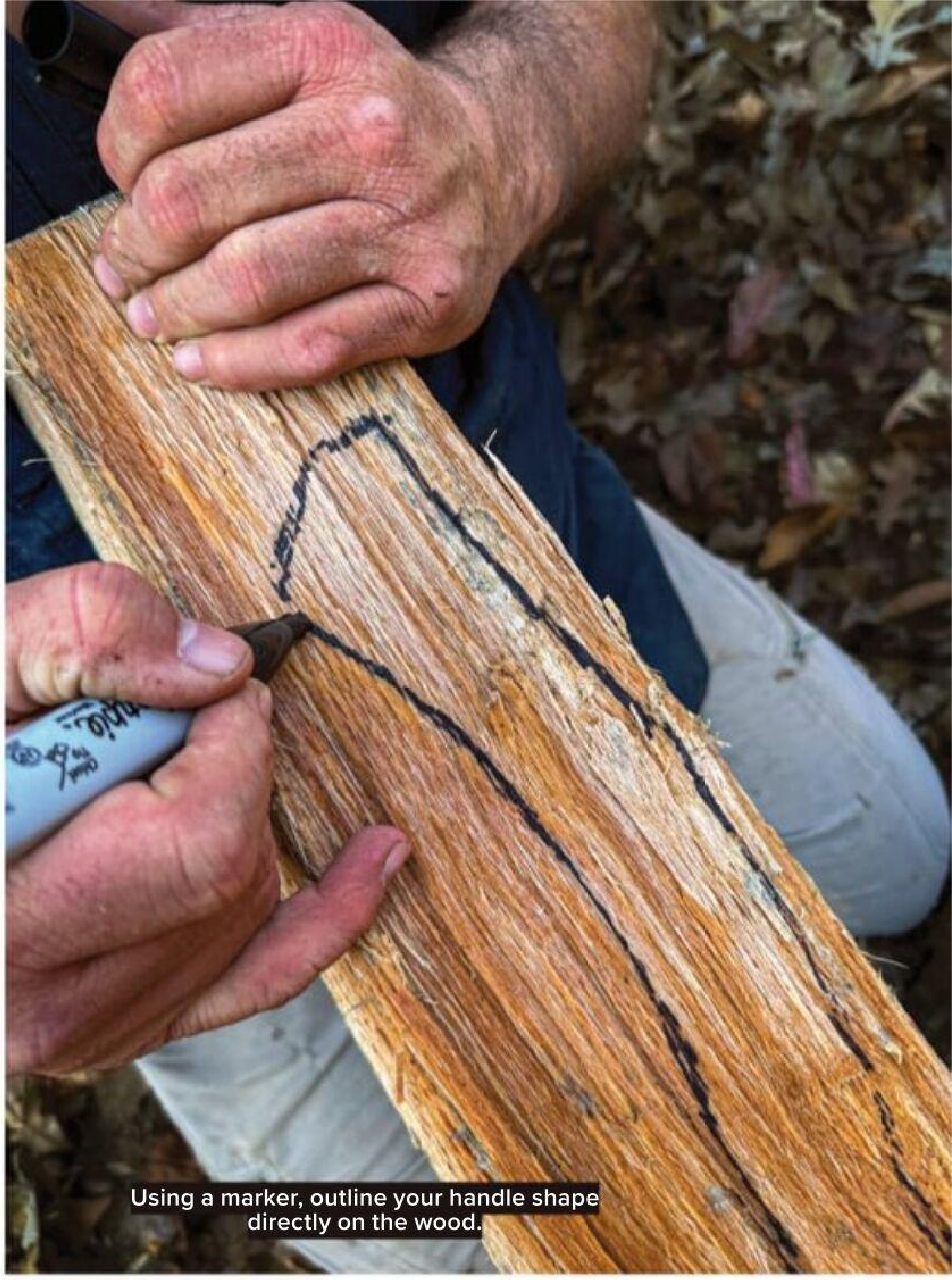
This is an excerpt from Craig Caudill's new book, *Wild Woodcraft*.

The secret to a long-lasting ax handle is selecting a piece of dense wood with a straight grain. It's common to find axes with broken handles or mishandled and need a new handle. Antique ax heads with potential for restoration can often be discovered at flea markets, garage sales and agricultural auctions. These are all excellent reasons to have the skill to build your own ax. Although creating a handle from scratch is demanding, the outcome is rewarding. Crafting your handle allows for a personal touch to the tool you'll use in future outdoor adventures.

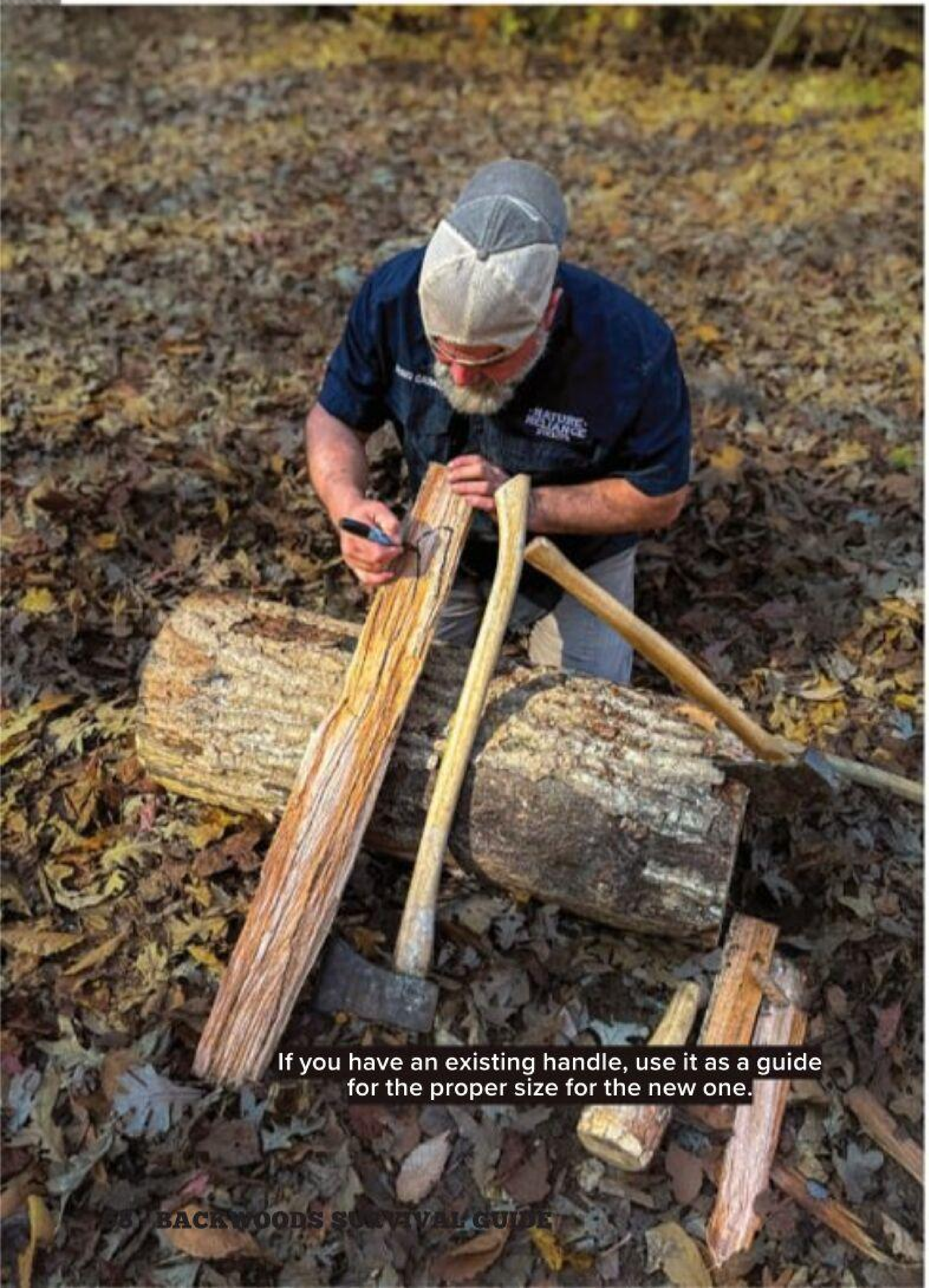
For this project, you will need a selection of materials, including a marking tool for outlining your design and an existing ax handle to use as a tracing guide. A handheld ax and

Here's the author with the log from which the final product originated.

Select a well-aged hardwood, like hickory, ash or oak.



Using a marker, outline your handle shape directly on the wood.



If you have an existing handle, use it as a guide for the proper size for the new one.

a wilderness saw are essential for initial shaping. At the same time, a drawknife will help in refining the form. Various rasps and files will be necessary for smoothing out the wood, alongside an ax head to fit onto your handle. Sandpaper in multiple grit levels is required for finishing the surface to a smooth texture. Wood treatment oil, such as linseed or a similar preferred product, will be needed to protect and finish your handle. Additionally, a woodcraft hammer will aid in assembly, and a metal wedge may be used to secure the ax head to the handle, though it is optional.

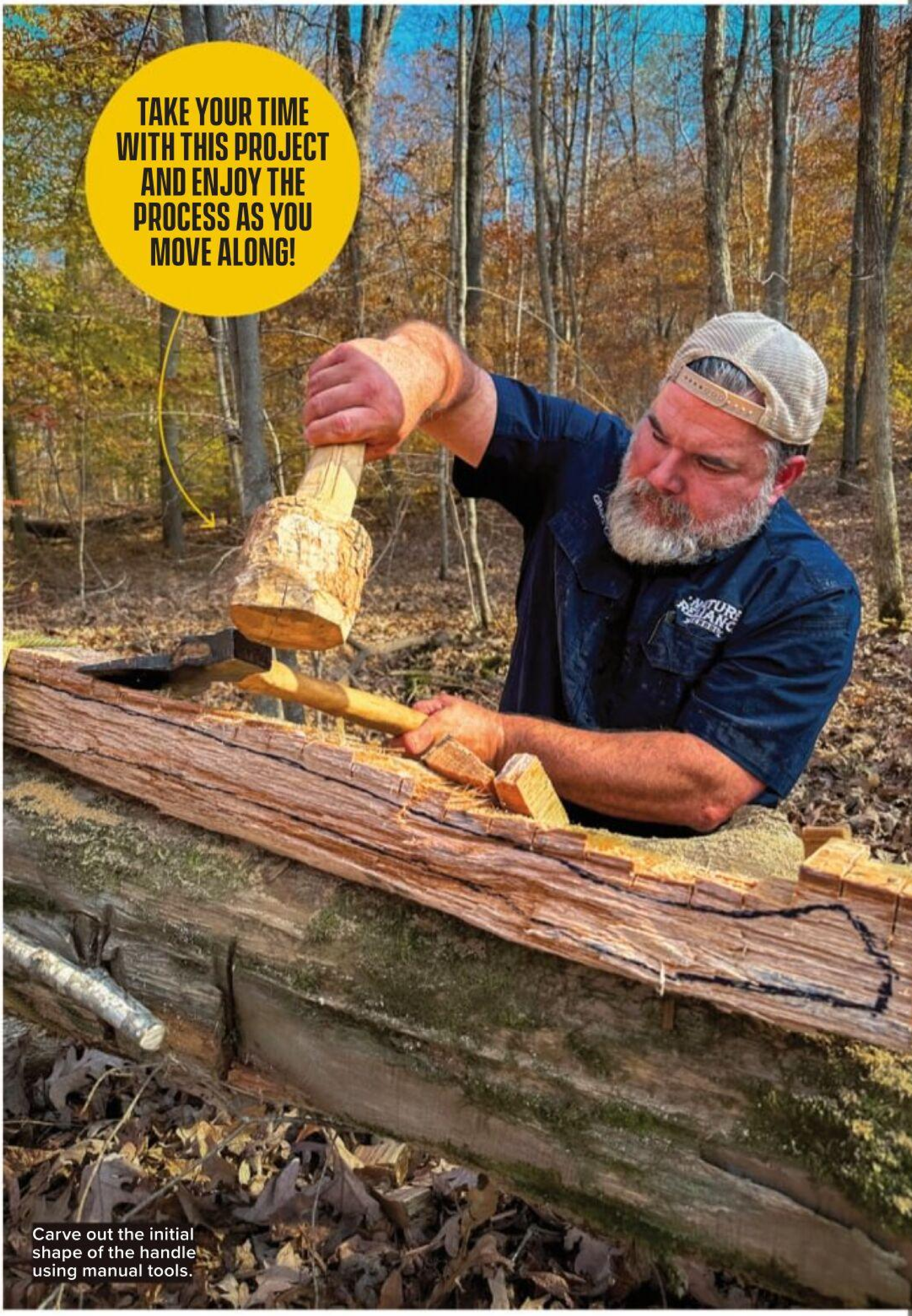
STEP BY STEP

Begin with selecting a well-aged hardwood like hickory, ash or oak, ensuring it is free of knots, splits or any defects. The wood's grain should align with the length of the handle for maximum durability. Please refrain from using freshly cut wood, as it tends to shrink and crack. For this project, I opted for a scarlet oak that had been dead for years, preserved well by its bark—akin to the methods used by early settlers. Typically, wood should be sourced and allowed to season over a few months. That said, I embarked on this project and completed it in a single day.

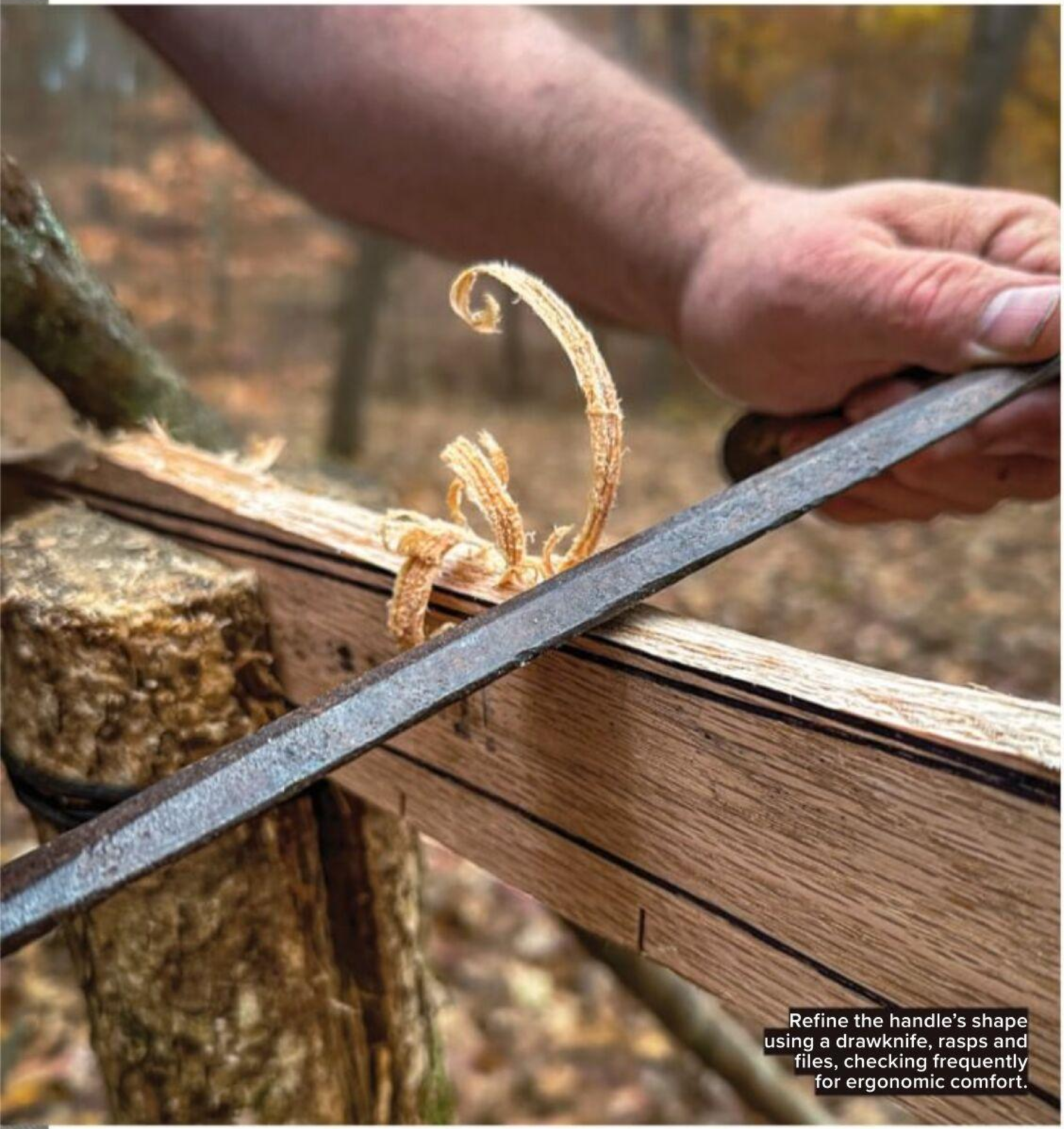
Outline your handle shape directly onto the wood. If you have an existing handle, it can serve as a guide. Otherwise, design a shape that fits comfortably with your ax head. I typically use a black Sharpie marker because of its staying power, and it is easy to see on the wood. You will remove it when you rasp and sand the handle, so don't worry that it will be visible in the final project.

Carve out the initial shape of the handle using manual tools. Although a band saw would be quick and efficient, a small ax and saw are preferred for this hands-on method. Implement stop cuts to avoid removing too much material at once and to navigate around any unforeseen knots or changes in grain direction. Stop cuts are a woodcrafter's greatest friend in removing large sections of material without removing too much. If you cut into a piece and expect it to go straight down the grain and through the other end at the same thickness, you will quickly be disappointed. Some straight-grain woods like birch or pine might do that, but those don't make for hard-use tool handles. To make stop cuts, use a small ax to make several short cuts along the length of the material you want to remove. Then, once that is done, you can make one more significant cut that removes them all in one swift action. This allows you to remove material methodically and not fall victim to unseen knots or grain changes that will cause you to remove too much at once.

Refine the handle's shape using a drawknife, rasps and files, checking frequently for ergonomic comfort. Pay close attention to the end of the handle that will be inserted into the ax head, ensuring a snug fit. It is always best to leave too much material and test the


TAKE YOUR TIME WITH THIS PROJECT AND ENJOY THE PROCESS AS YOU MOVE ALONG!

Carve out the initial shape of the handle using manual tools.



Refine the handle's shape using a drawknife, rasps and files, checking frequently for ergonomic comfort.

fit frequently during this process. You can permanently remove material but not put it back on, so this step requires ample patience.

WHILE HICKORY IS OFTEN SEEN AS THE TRADITIONAL CHOICE, ANY HARDWOOD, INCLUDING OAK OR ASH, THAT'S FREE OF KNOTS AND SPLITS WILL WORK.

Test the fit of the ax head with the handle, adjusting as needed to achieve a straight and tight connection. If you are new to this, you want to get the handle slightly into the eye of the ax head. Then, pound from the handle end of the ax. Physics will bring the ax head onto the handle where you need it.

Smooth the handle using rasps, then sandpaper, starting with a coarse grit to remove rough patches, then moving to finer grits for a sleek finish.

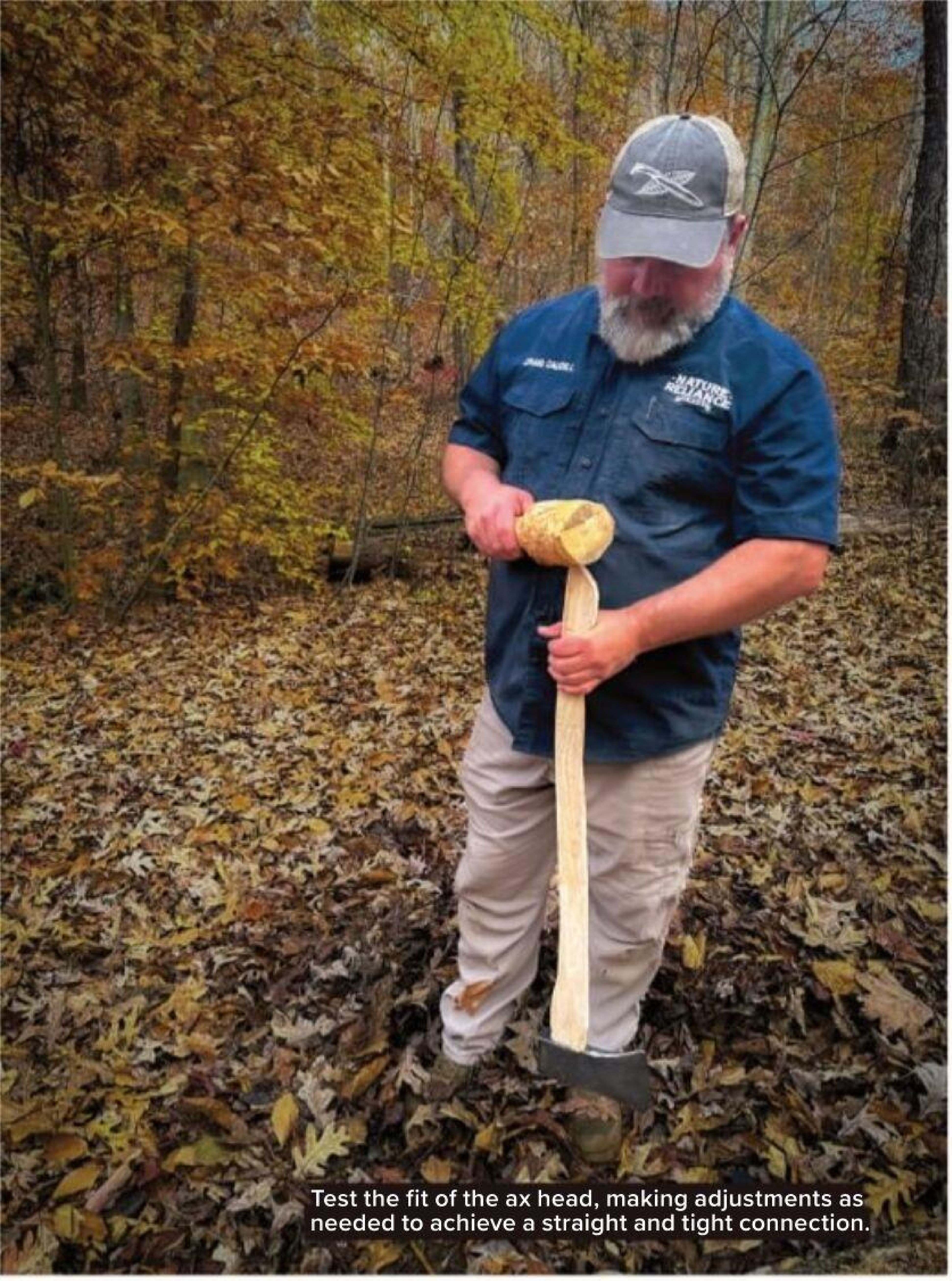
Attach the ax head firmly to the handle, securing it with a wedge. A piece of dogwood was used for its hardness in our project. Wood glue or homemade pine pitch could also be used for additional stability.

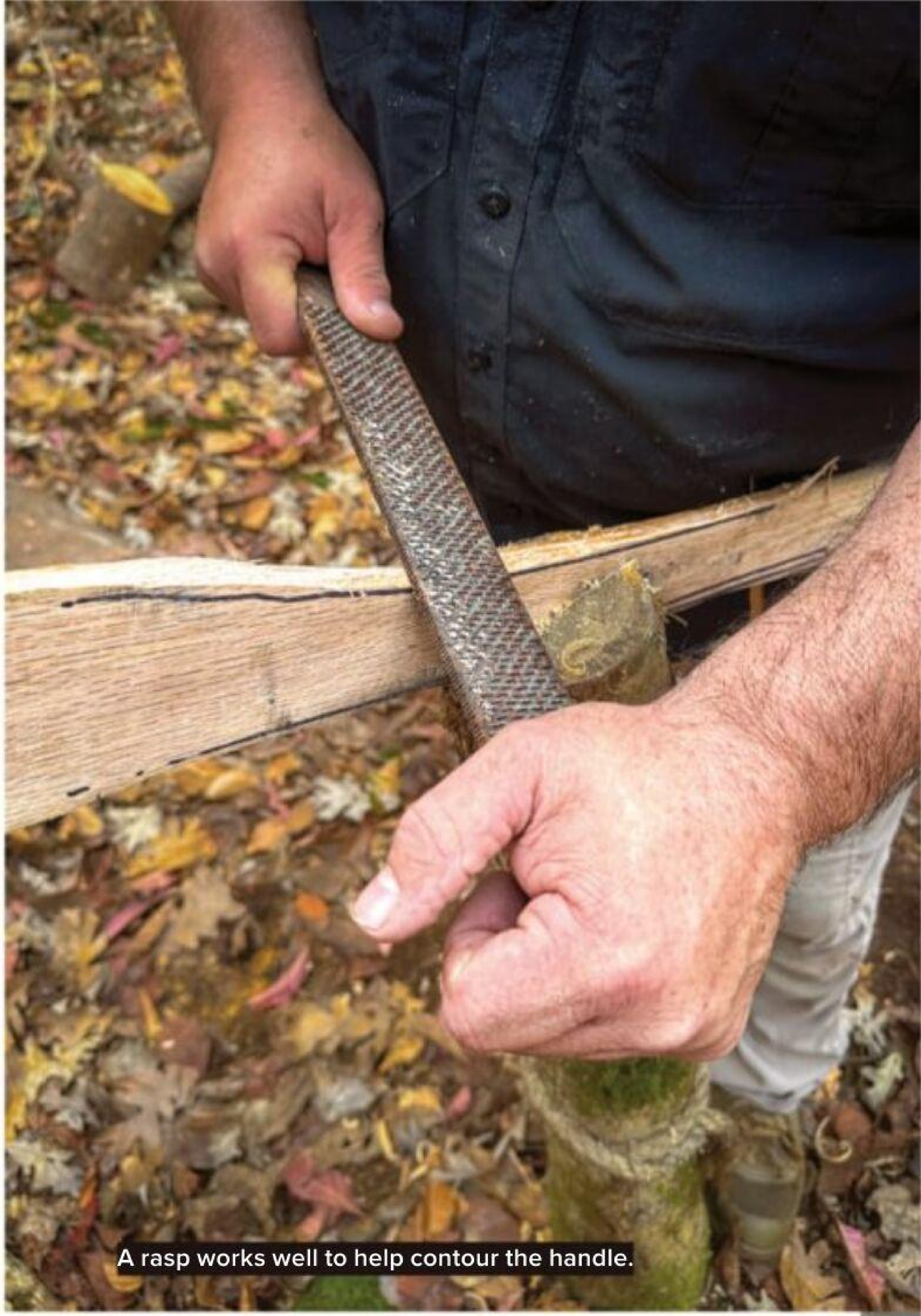
Protect the handle with a coat of boiled linseed oil or another preferred finish. Warming the handle beforehand can enhance oil absorption. Apply several coats, allowing each to dry thoroughly.

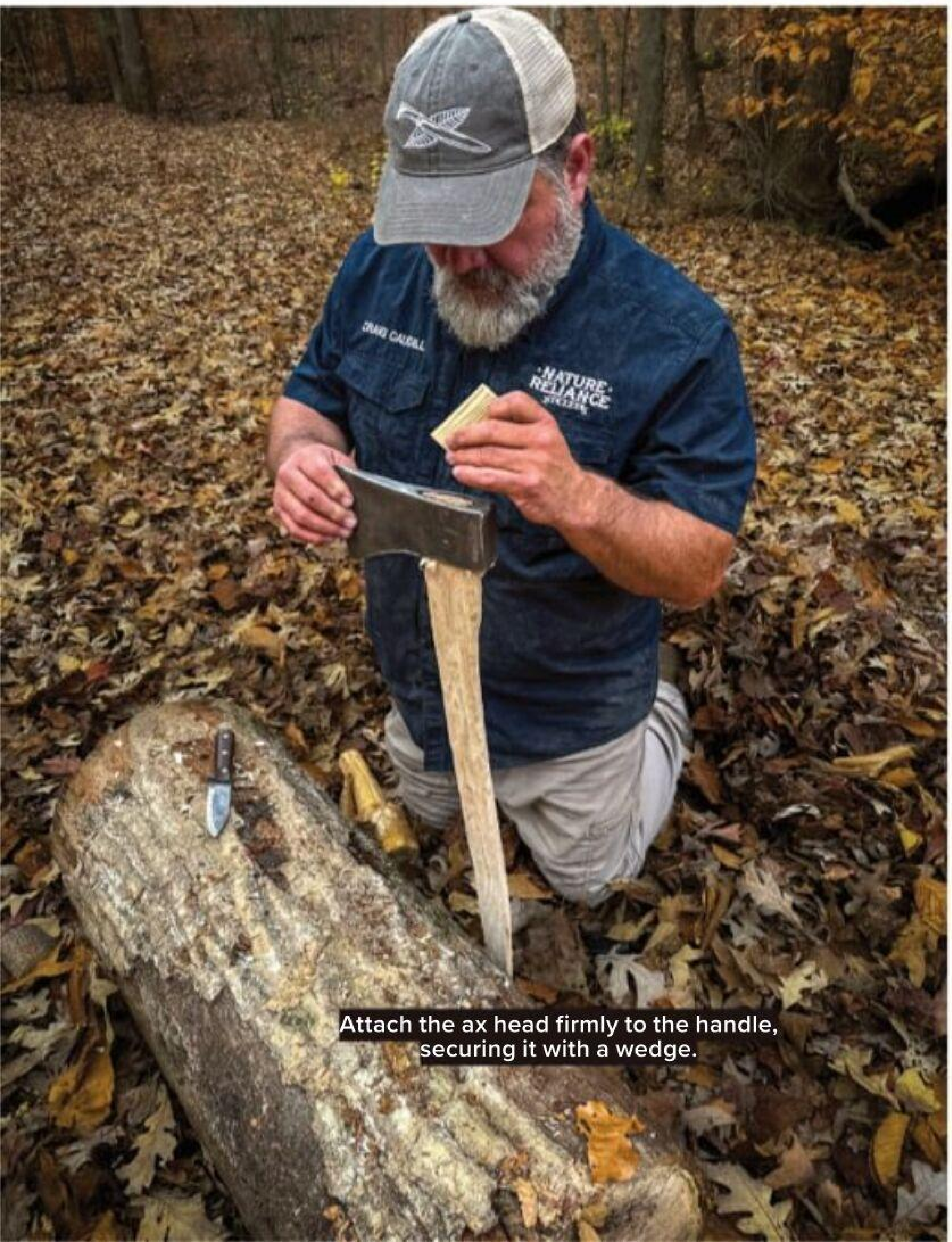
Regularly check the ax for any signs of wear or detachment, maintaining its condition with occasional reapplications of oil or finish, as necessary.

This project took up nearly an entire day in the late winter. Plan accordingly for this amount of work, or plan your time better. I have always wanted to do things like this as the pioneers did. This sort of building would have been done in a few hours so they could get to work, and then later, more appropriate and refined handles could be cut and dried.

You will want to be well hydrated with plenty of electrolytes to get this one done. By the end of the project, my forearms were screaming at me and eventually cramping due to so much use. In the end, it was worth it.


Test the fit of the ax head, making adjustments as needed to achieve a straight and tight connection.


A rasp works well to help contour the handle.


Attach the ax head firmly to the handle, securing it with a wedge.

AX HANDLE MAINTENANCE

Regular maintenance of your ax will be necessary, especially if you use it a lot. The two primary needs are oiling the handle and securing the head. Both should be checked after each use. Once the handle starts to dry, it will be more susceptible to splintering. The frequency of oiling is entirely dependent upon where it is stored. I have an ax that stays on an ATV. I oil it once monthly because it is exposed to the elements more regularly. Others I may not oil but once a year, as they see little use. If I use them often over a few days, like during a course I teach, I oil those tools once a week. That is mainly because I use some of them several hours a day over several days.

The head should be checked at least daily if the ax is being used regularly. This is one of those things that I pay attention to throughout the life of the tool. If the head is loose, I secure it more firmly using a mallet or hammer. Sometimes, the wedge that secures it may come unglued or work its way out. This, too, can be secured easily with a couple of quick mallet hits.

DON'T TOSS THEM OUT!

Using shells for bone health and more

BY REUBEN BOLIEU

Rinse them well after cracking, then set them aside for later.

THE BREED OF CHICKEN OR THE COLOR OF THE EGG DON'T MATTER MUCH!

EGGSHELLS ARE RICH IN CALCIUM CARBONATE, THE SAME MINERAL FOUND IN OUR BONES AND TEETH. SUPPLEMENTING WITH EGGSHELLS IS A CHEAP AND NATURAL WAY TO IMPROVE BONE DENSITY, REDUCE JOINT PAIN AND STIMULATE CARTILAGE GROWTH.

During my visits to the Rollins place in Georgia—they happen to be chicken farmers—we always make sure to collect eggshells to create calcium for their chickens. Intrigued by this process, I asked Mrs. R to explain it to me. Surprisingly, most chicken farmers don't make use of this valuable resource. Calcium deficiency in chickens can lead to problems like lethargy or low egg production. By feeding them crushed eggshells, you can replenish the calcium they lose during egg-laying and prevent these issues.

Many people perceive eggshells to be mere waste products that are discarded after cracking an egg. However, this is far from the truth, as they are a source of essential minerals like calcium, magnesium and potassium that can be beneficial to your health, even if you don't have chickens. Eggshells can also serve other purposes, ranging from enriching garden soil and working as a natural abrasive for cleaning, to acting as a garden pest deterrent.

FEEDING THIS CALCIUM TO YOUR CHICKENS WILL HELP THEM TO FORM STRONGER AND HEALTHIER EGGSHELLS, AS WELL AS MAINTAIN BONE HEALTH.

NATURAL SUPPLEMENT

Calcium is a crucial mineral that plays a vital role in maintaining the health of your bones, teeth, muscles and nerves, as well as with blood clotting. However, many people do not get enough of it from their diet, especially those who avoid dairy products or have lactose intolerance. Fortunately, eggshells are a fantastic source, as they contain about 2 grams of calcium per shell. You can add a teaspoon of ground eggshell powder to your smoothies, juices, soups or baked goods as a natural calcium supplement.

Here's how to make it.

You'll need the shells of a dozen organic, pastured chicken

Eggshell calcium is rich in bone-strengthening minerals like magnesium, strontium, fluoride and selenium.

eggs, preferably soy-free (quality eggs are essential to ensure the purity and quality of the powder). Additionally, you will need a stockpot to boil the shells, an oven to dry them out, a coffee or spice grinder to grind them and a small Mason jar with a lid to store the powder.

First, rinse the shells thoroughly under running water to remove any dirt, debris or bacteria. You can keep the shells in the carton or on a baking sheet for ease of use.

Before boiling the eggshells, remove as much of the inner and outer membranes as possible. These membranes can harbor bacteria and other contaminants that may affect the purity of the powder. To remove these membranes, gently peel them off with your fingers or a small spoon.

Next, place the eggshells in a stockpot and add enough water to cover them. Bring the water to a boil and let the eggshells boil for 10 minutes. This process will eliminate any remaining bacteria or contaminants present on the shells.

After boiling the eggshells, remove them from the pot and let them dry out completely. You can place them in a preheated oven at 200 F for 10 to 15 minutes to speed up the drying process.

Once the eggshells are completely dry,

If you crack them the right way and leave a good chunk of the shell intact, it can be used for planting seeds.

Once the seedlings are ready to go outside, you can plant the shell right in the ground—just crack it a bit first.

use a coffee grinder to grind them into a fine powder. Grinding the eggshells into a powder will make them easier to consume and make the calcium easier to absorb.

After grinding, sift the powder through a fine-mesh strainer to remove any large or sharp pieces that could cause harm to your teeth or digestive tract.

Finally, store the powdered eggshells in a small Mason jar with an airtight lid to keep it fresh for future use. Add the powder to foods to increase your calcium intake.

To increase the absorption of calcium, add some lemon juice or vinegar to the water, juice, smoothie or food that you mix with the eggshell powder. This will create a more acidic environment in your stomach, which helps dissolve the calcium carbonate crystals.

Make sure to monitor your calcium intake and consult your doctor

CALCIUM FOR CHICKENS

Eggshells are a good calcium source for chickens, which they need to form strong and healthy eggshells. Calcium also helps chickens maintain their bone health and prevents conditions such as soft-shelled eggs, egg-binding, or internal egg breakage. Chickens can eat crushed shells as a free-choice supplement. Eggshells should not be mixed with the feed, as this can cause calcium toxicity. Some people prefer to give their birds oyster shells, as they are more readily available and less likely to attract pests or predators. However, some chickens may prefer eggshells instead. Offer them both options and see which they choose.

Eggshells are a natural and inexpensive source of calcium carbonate, which can improve bone density, reduce joint pain and stimulate cartilage growth. Here are two different coarseness of shells.

before taking this supplement. Too much calcium can cause side effects such as constipation, kidney stones and an increased risk of heart disease. The recommended daily intake of calcium for adults is 1,000 to 1,200 milligrams per day.

That's not the only use for eggshells, of course.

FERTILIZE PLANTS

Calcium is particularly crucial for plants, as it helps them develop sturdy cell walls and resist diseases. Additionally, eggshells can help balance the pH level of your soil, because they are slightly alkaline. For a natural fertilizer, crush eggshells and sprinkle them around the base of your plants. Another approach is to create calcium-rich water by soaking shells in a jar for a few days and then watering your plants with the solution.

DETER PESTS AND SLUGS

Eggshells have sharp edges that can cut and irritate the soft bodies of slugs, snails and cutworms, which will prevent them from harming your plants. Moreover, eggshells can act as a repellent for deer and rabbits, as they dislike the smell. To use eggshells as a pest deterrent, scatter them around your plants or create a barrier of them around your garden.

THESE CRUSHED SHELLS DON'T JUST FERTILIZE, THEY PROTECT AGAINST PESTS!

Eggshells can help balance the pH of your garden soil, as they tend to be a bit alkaline.

CLEAN POTS AND PANS

Eggshells can effectively remove dirt, grease and stains without scratching your cookware. Simply crush them and mix with some water to form a paste, then use it to scrub your pots and pans.

CRAFTS

In addition to their health and homestead uses, eggshells can be used to create stunning crafts and art projects due to their unusual texture and color. Their delicate and intricate texture makes them ideal for creating mosaics, jewelry, ornaments and candles that are both beautiful and unique. You can add more creativity to your eggshell projects by painting, dyeing or decorating them with different colors and designs. Before you start your eggshell art, it's important to wash the shells thoroughly, remove the membranes and let them dry. Once they are ready, you can cut them, glue them or shape them to create your own masterpiece.

INCREASE THE ABSORPTION OF CALCIUM BY ADDING SOME LEMON JUICE OR VINEGAR TO WHATEVER YOU'RE COOKING WITH THE EGGSHELLS.

Reuben Bolieu is a passionate adventurer who explores remote and exotic places worldwide. He shares his expertise in survival techniques and woodcraft through his acclaimed writing, photography, and knowledge in survival classes and outdoor magazines.

STAINING ON PURPOSE

Add some natural color to your projects

BY CHRISTOPHER NYERGES

IN THE PAST, ALL DYES AND PIGMENTS CAME DIRECTLY FROM NATURE. DYES AND PIGMENTS WOULD BE USED TO COLOR CLOTHES AND FABRICS, MAKE INK, AND PAINT VARIOUS OBJECTS, SUCH AS POTTERY, ARCHERY BOWS AND MORE.

This can be a great way to help you either blend in or stand out, whichever your goal may be.

By cinching parts of the fabric, you can create interesting patterns with the dyes used.

Much of the diversity of colors had to do with whatever was locally available. Today, this is largely a lost art, though there has been a resurgence of interest in natural dyes. When I was still a teenager, I experimented with dyeing fabrics, such as T-shirts, but I used mostly Rit dye from the fabric store. Slowly, I became more and more interested in the use of plants (and other natural materials) for making dyes and pigments.

The various natural colors come from soils, minerals, clays, mushrooms and different parts of plants, including leaves, roots, fruits, nuts and such. These raw materials are used to make dyes for fabrics, ink for writing or for tattoos, colors for pottery, paint for murals or various objects, and more. Each raw material will have unique idiosyncrasies, and every fabric you are dyeing will also have specific concerns.

Let's go over the procedure for dyeing fabric. There are many possible variations to each of these steps, but we'll walk through the basics. Remember to only dye natural fabrics since synthetics do not hold the colors well. Work with 100% natural fibers, such as cotton, wool, linen, hemp and possibly silk.

PROCESSING THE FABRIC

The first step is to "scour" the fabric to remove any waxes or chemicals so the fabric will be able to absorb the dye. Scouring can be done in a washing machine, by hand or simply by soaking (or soaking and boiling).

For cellulose materials, like cotton, use soda ash for scouring. Sometimes, cream of tartar is used in this process, and master dyer Amy Stewart often uses a neutral soap, like Dr. Bronner's baby soap, to wash or scrub her materials. Put water in a pot, add about 3 tablespoons of soda ash, and boil for about two hours. The water will become milky-looking or even brownish if you're using a raw material like linen or hemp.

For wool, just put it in a pot of water, get it warm (but not so hot that it shocks the wool and felts it), let it sit for a couple of hours at least, and stir it occasionally.

Once you're done, you'll need to thoroughly rinse the fabric and let it dry.

MORDANT

The mordant process allows the dye to be "fast" so that it will not fade or wash out in the first washing.

There are many possible mordants, which can depend on the fabric used. The process is to soak the fabric in the mordant first and then dye it afterward.

Stewart uses alum sulfate for wool and alum acetate for silk. She points out that symplocos is another mordant. It comes from an Indonesian tree whose leaves are naturally rich in alum; it's made into a powder and used for protein or cellulose fibers.

Stewart typically adds about 3 tablespoons of alum sulfate in a pot of water, heats it to a simmer—being careful with wool—and allows the fiber to soak in there for two to 24 hours.

Other possible mordants include 1 ounce of alum for each 1½ quarts of water and ¼ ounce of washing soda added to cotton. For wool, alum or chrome (potassium dichromate) may be used. One ounce of alum is mixed with each gallon of water for each quarter pound of wool.

For dyeing wool, vinegar has been used in the ratio of ½ gallon of vinegar to every 2 gallons of water.

Many mordants are available from fabric shops. Some may alter the color of the dye or brighten it. In the old days, lye would be obtained by pouring water through wood ashes, though I do not know any dyers who do this today. Again, many variables with mordants exist, such as the type of material to be dyed. I strongly recommend that you seek out someone who does natural dyeing and ask them what methods they use.

Stewart points out that you don't need mordanting when using products rich in tannins

THESE SORTS OF ADORNMENTS ADD A PERSONAL TOUCH AND A BIT OF CLASS TO GIFTS!

You can dye different lots of yarn or other cordage.

INKS AND PAINTS

To make simple inks and paints, you can crush the plant material, charcoal or clay, sift it, and mix it with oil or egg whites. In some cases, adding water will make a suitable ink or paint.

In his book *Earth Pigments and Paint of the California Indians*, Paul Campbell discusses how rock art paint was made in the California desert and how it lasted so many centuries. Campbell describes the many colors used for rock art and painting arrows, bows, and even clothing. For the paints to last, the Native people crushed the wild cucumber plants' seeds and mixed them with various ochres, clays or other sources.

Plant material, charcoal or clay can be used to make ink and paint.

for dyeing, like oak galls. Also, mordanting is unnecessary when using indigo for dyeing because its molecular structure makes it adhere directly to the fabric, and black walnut is rich in tannins, so the fiber does not require a mordant.

DYEING

You make your plant-based dye by soaking a full pot of the plant material in water and simmering for about an hour or so, stirring occasionally. The more material you add to the pot, the richer the color will be. Then, remove the pot from the heat and let it sit for about eight hours. Strain out the plant material, then return the liquid to the pot and heat it up again.

Now, add the fabric (or yarn) to be dyed. Let the material simmer for about two hours and stir occasionally to distribute the dye evenly. Turn off the heat and let it sit for about eight hours, then thoroughly rinse the fabric and let it dry.

SOURCES FOR COLORS

As you might imagine, different plants will yield different colors. Here are some short lists to help you identify plants in your area that can help you achieve the shade you desire.

Yellow
- Goldenrod flowers
- Willow leaves
- Pear leaves
- Chamomile flowers
- Agrimony leaves
- Osage orange wood shavings
- Burdock leaves
- Sagebrush
- Eucalyptus bark

Red
- Whole beets
- Birch, inner bark
- Sorrel stalks and roots
- Sandalwood, dried and powdered
- Pomegranate fruit
- Pokeweed berries
- Sassafras root bark
- Cochineal, with a citric acid afterbath

Green
- Nettle leaves
- Mullein leaf
- Plantain leaves and roots

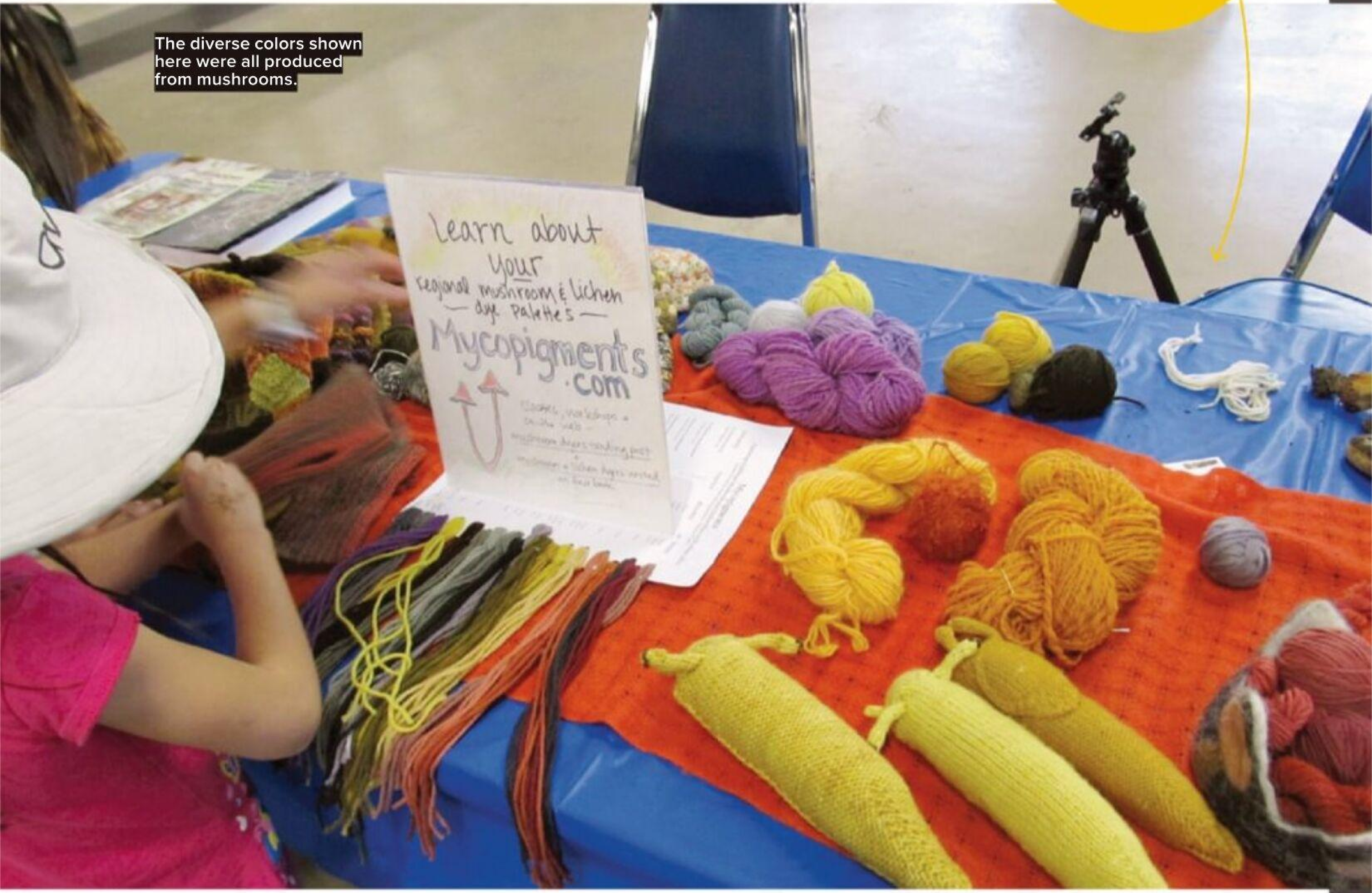
Blue
- Elderberries
- Indigo leaves
- Red bearberry leaves
- Bilberries

Brown
- Onion skins
- Oak bark, acorns or galls
- Walnut husks
- Coffee grounds

Purple
- Pokeweed berries
- Raspberries
- Dandelion roots
- Red cabbage
- Hibiscus petals
- Cochineal, from the prickly pear cactus, with an iron afterbath
- Indigo (Note: There's no need to use a mordant with indigo)

This is by no means a complete list. Once you try some of these common sources of dyes, consider experimenting. Most people who start down this path will begin with materials abundant in nature near where they live. Onion skins, acorns, walnut husks, elderberries and nettle leaves are all common nationwide and make good candidates for starting your experiments with dyes.

YOU CAN EVEN TURN THIS INTO A PROFITABLE HOBBY WITH A LITTLE WORK!



The diverse colors shown here were all produced from mushrooms.

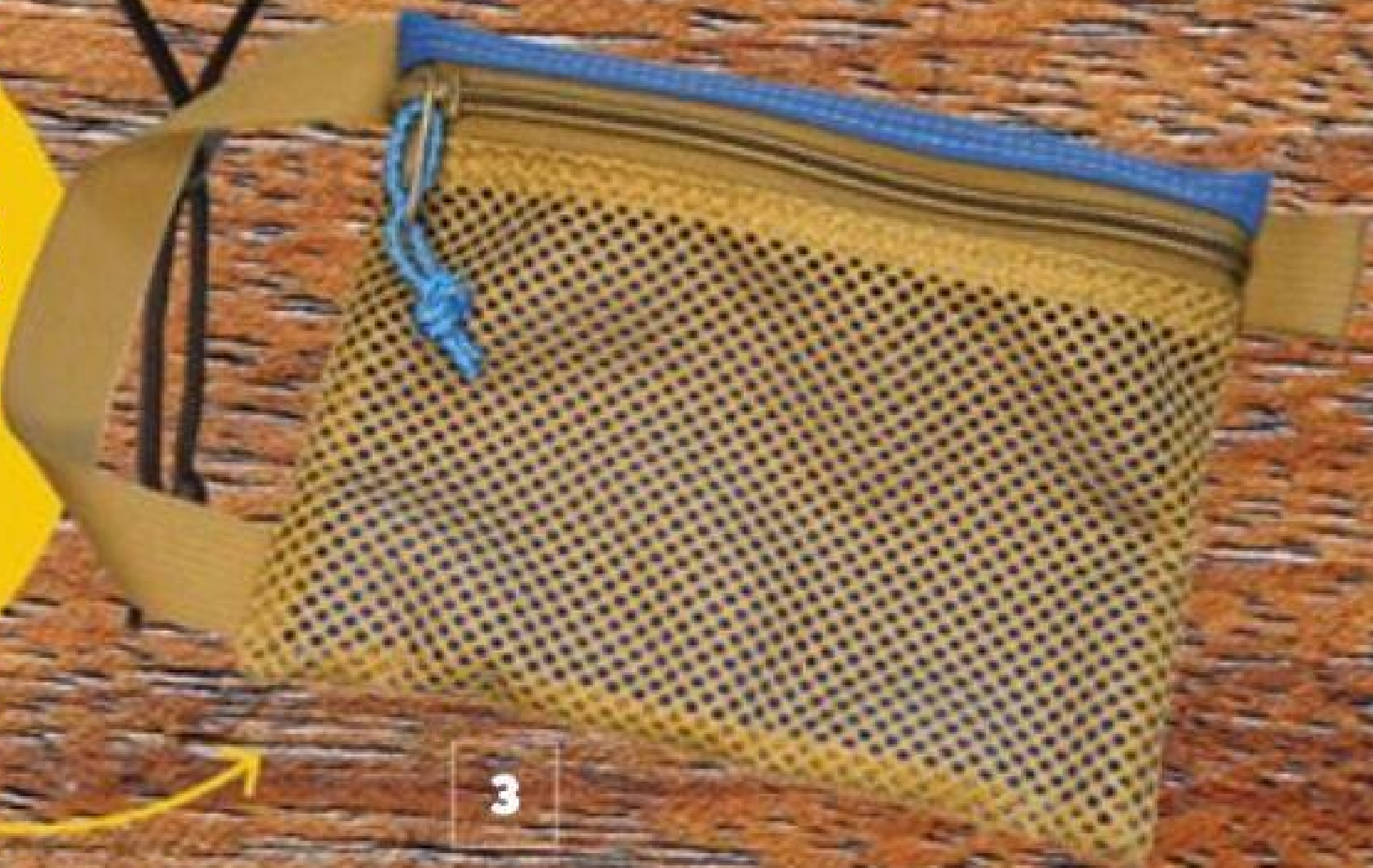
Christopher Nyerges is a skills instructor who has authored "How to Survive Anywhere" and other books describing basic bushcraft and survival. Information on his classes and books is available from SchoolofSelf-Reliance.com, or Box 41834, Eagle Rock,CA 90041.

CHAPTER 4

EQUIPMENT

HUMANS INVENTED TOOLS FOR MANY REASONS, INCLUDING THAT THEY'RE FUN TO PLAY WITH!

NEW PRODUCTS



THIS POUCH HELPS YOUR WATER FILTER DRY OUT BETWEEN USES, REDUCING MOLD RISKS!

1

ALLHAULA 30-CAN COOLER

The fully insulated Allhaula 30-Can Cooler puts lesser coolers to shame. It features a 1,092-cubic-inch capacity, waterproof seams and zipper, and laser-cut MOLLE panels for attaching accessories. It measures 15.5 inches by 11.5 inches by 12.75 inches. This cooler is designed for rough use and is ready to go whenever you are and wherever you might be headed.

- **MSRP** $175
- **URL** *511tactical.com*

2

CRUSHABLE FLATS HAT

Keep your face and neck protected from the sun's punishing rays while you're out in the field. This straw hat is crushable, packable and very comfortable. Made from 100% palm, it also has a wicking sweatband for those hot days and an adjustable chin strap to help keep it in place when the wind kicks up. This is the perfect accessory for quick hikes and lengthy campouts.

- **MSRP** $59
- **URL** *duckcamp.com*

3

WATER PURIFICATION KIT POUCH

Keep your filtration gear secure, organized and easy to grab with this purpose-built pouch. The mesh front allows your equipment to air-dry, reducing the chance of mildew. The backside is solid Cordura fabric, so nothing gets dirty when you set it down. The webbing grab handle makes it easy to snag out of your pack.

- **MSRP** $25
- **URL** *tuffpossumgear.com*

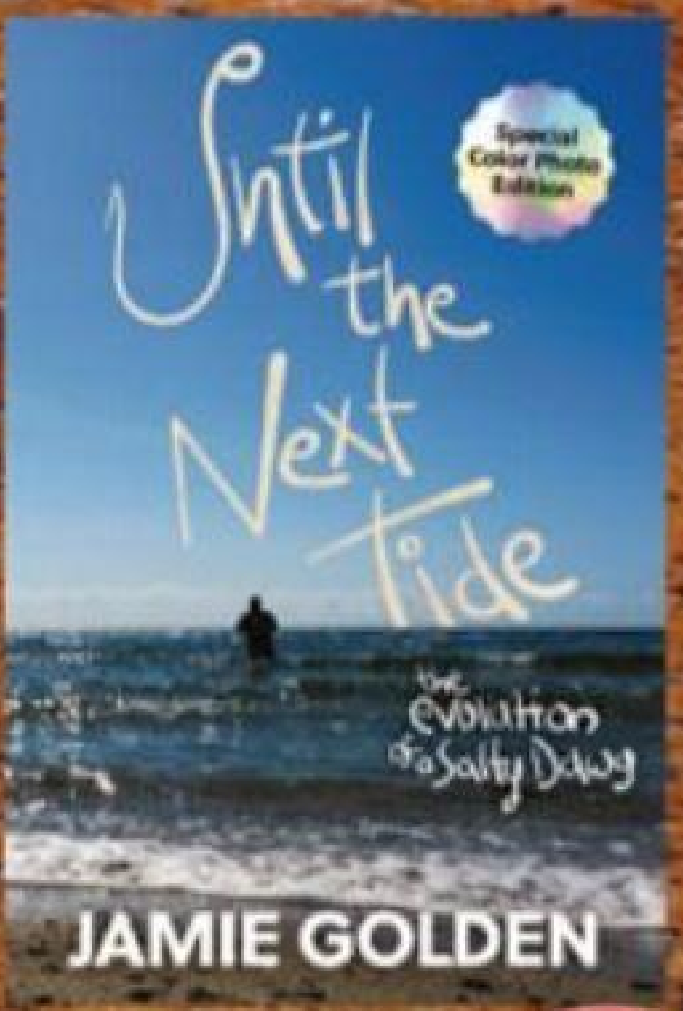
The latest and greatest gadgets and goodies.

BY BSG STAFF

4

THIS HANDY BELT POUCH WILL HELP YOU BRING HOME ALL THE GREAT STUFF YOU FIND!

5



6

4

DEEP FORAGING POUCH

It starts as a compact belt attachment, measuring just 3.0 inches by 3.5 inches and an inch thick. But once you've started to forage treasures, unsnap the cover to unfurl a pouch that runs a full 9 by 12 inches. Whether you're collecting tinder in the woods, shells and rocks on the beach, or eggs from the chicken coop, this waxed-canvas marvel will carry it all.

- **MSRP** $55
- **URL** *pnwbushcraft.com*

5

MINIMALIST NESSMUK

Patterned after the famous Nessmuk fixed blade, this knife features durable D2 steel with an easy-to-grip Micarta handle. The versatile sheath can be worn on a belt, around the neck, or strapped to a pack, giving you plenty of options. The Minimalist Nessmuk has a deep belly, a strong tip and a hollow grind. The design is both quite stylish and very functional.

- **MSRP** $45
- **URL** *crkt.com*

6

UNTIL THE NEXT TIDE

If your outdoor adventures include venturing out on the water, you'll want to check out this story of the evolution of a true "salty dawg." Jamie Golden has spent most of his life chasing sea life, from black eels to lobsters and more. In this book, he traces his steps from freshwater fishing holes to surf casting, and the lessons he's learned along the way.

- **MSRP** $25
- **URL** *amazon.com*

STREAMLIGHT®
MEGASTREAM® HP USB
7
8
MSR
9
WORK SHARP

KEEP ALL OF YOUR BLADED TOOLS SHARP ON THE GO WITH THIS IN YOUR PACK!

7

MEGASTREAM HP USB

This is a compact powerhouse of a light, producing 310,000 candela with a range of 1,114 meters. Charge it via the USB port or swap out the removable battery for a fresh one. It has three modes: high (1,350 lumens), medium (470 lumens) and low (145 lumens). At just 6.6 inches long, this is a flashlight you can easily carry in your pack or vehicle.

- **MSRP** $219
- **URL** *streamlight.com*

8

HUBBA HUBBA LT 2-PERSON BACKPACKING TENT

This tent has plenty of room for you and your partner to stretch out. It has a roomy 32 square feet inside. The solution-dyed micromesh provides breathability as well as bug protection. It's also good for stargazing. It sets up fast, so it's handy for sudden rainstorms. StayDry rain gutters catch drips.

- **MSRP** $550
- **URL** *cascadedesigns.com*

9

FOLDING FIELD SHARPENER

Lightweight, compact and so very packable, this Folding Field Sharpener will keep your blades in top condition anywhere you happen to go. It features a 400-grit diamond plate as well as a fine-grit ceramic plate, both with built-in guides. There's even a pocket clip in case you want to just keep it in your jeans as you work.

- **MSRP** $30
- **URL** *worksharptools.com*

THIS IS THE MOST CREATIVE AND INNOVATIVE MULTITOOL WE'VE COME ACROSS YET!

10

SKYWEIGHT UTILITY CHEST PACK

Chest rigs are a great way to keep essentials with you as you explore the great outdoors. This one weighs less than a pound and has a 2-liter capacity. It's loaded with organizational features like zippered and stretch woven pockets, so you can find what you need when you need it. There is even an ambidextrous CCW compartment.

- **MSRP** $655
- **URL** *511tactical.com*

11

HALF/CHETE

Designed to be the perfect balance between usefulness and ease of carry, as the name might imply, the Half/Chete is half the size of a traditional machete. The 7-inch 1095 steel blade chops and slices, giving you a one-tool option for woods carry. It comes with a high-quality and great-looking sheath made from leather and reclaimed fire hose, which is perfect for personalization.

- **MSRP** $149
- **URL** *woodsmonkey.com*

12

3B MULTITOOL

Made in the USA, this solid piece of AEB-L stainless steel combines three popular tools in the bushcraft world. It's a beard comb, a bottle opener, and a bow drill bearing block, all in one. It has dual lanyard holes for customization. Make your fire, pop the top on an adult beverage and keep your beard clean while you're hanging out with friends in camp.

- **MSRP** $55
- **URL** *tuffpossum gear.com*

MORE THAN JUST COVER

An incredibly versatile pack addition

BY MICHAEL D'ANGONA

Whether you need to get away from sun or rain, a tarp is a great option.

TO THE LAYMAN, A TARP MAY ONLY SEEM USEFUL IF YOU NOTICE LEAKS IN YOUR ROOF, AND YOU PUT THE FAMILIAR CRISP BLUE COVERING OVER IT UNTIL REPAIRS CAN BE DONE.

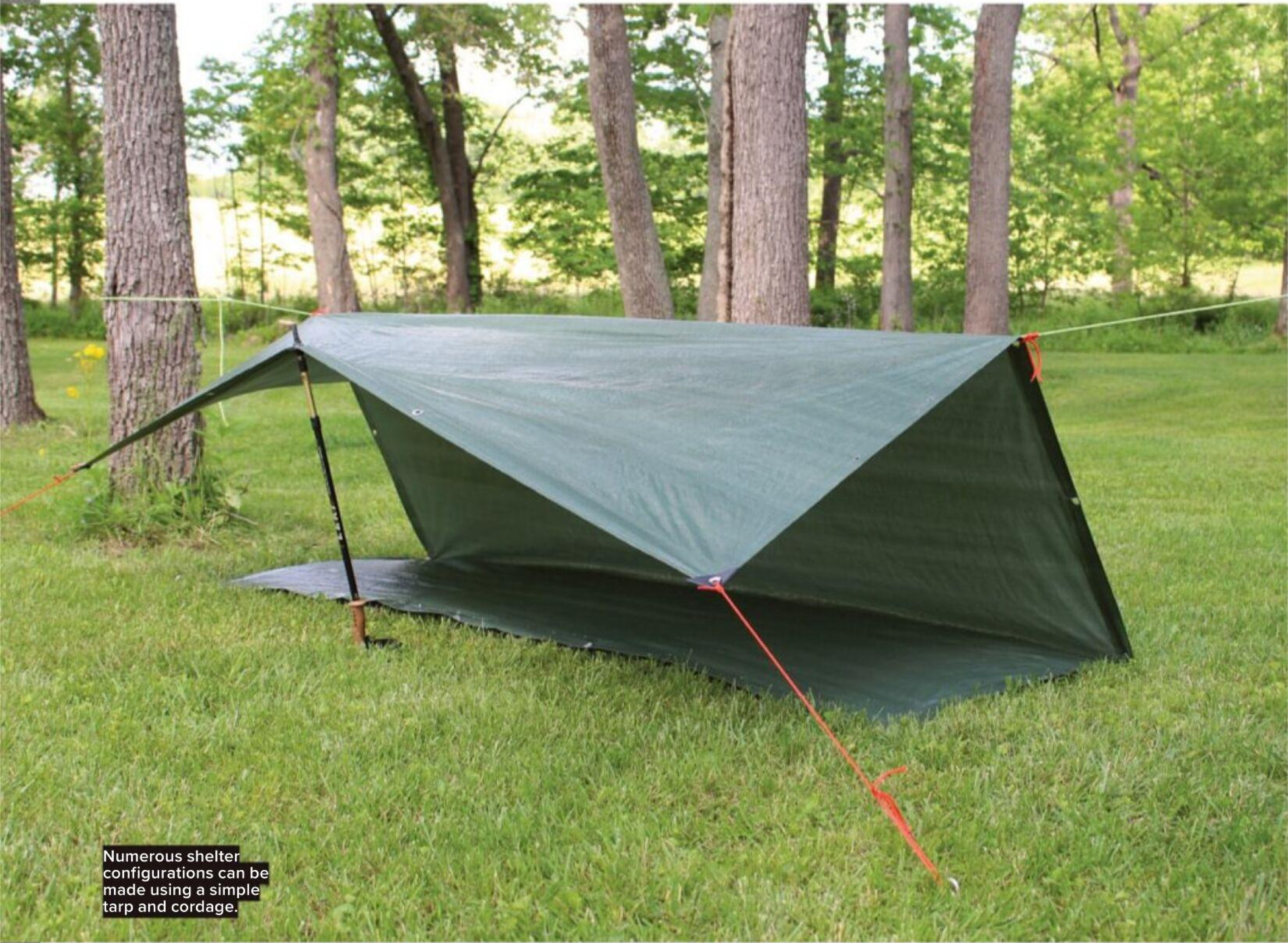
However, for the person prepping for a future survival scenario or any unforeseen emergency situation, a tarp can do so much more.

A tarp's main claim to fame is versatility. It can perform such varied tasks as water collection and gear protection, and it can be used to signal to others. Additionally, it keeps you dry from the moist earth, allows you to create a fast shelter, and makes a handy carry-all for wood or other materials.

Survival gear is at its best when one item can take the place of many, reducing weight, bulk and the quantity of items to carry, and a tarp does just that. Here, we'll shed some light on its many uses, its few drawbacks and why it should be in your top 10 of must-have survival items.

QUALITY VARIES

Before we go into a tarp's multiple uses, it should be noted that all tarps are not created equal. Like almost any piece of gear, there are inexpensive, lower-quality versions, as well as pricier, higher-performance selections. Of course, your budget will have a lot to do with the one you may select, but bear in mind that a poor-quality, cheap tarp may fail you soon into your



Numerous shelter configurations can be made using a simple tarp and cordage.

outdoor excursion. Rips, tears, grommets falling out, corners ripping under pressure from cordage—these are all very real possibilities when facing the rigors of the outdoors.

A thin tarp—roughly 5 to 6 mils thick (1 mil is 1/1,000th of an inch)—is extremely lightweight, but won't hold up for very long under strenuous use; on the other hand, thicker tarps, often 20 mils or thicker, are highly durable, but can be heavy in your pack. This is where you must find that perfect balance between weight and bulk, and the amount of money you're willing to pay.

Additionally, other factors that need your attention are fabric material, UV protection, fire protection, thread count and light-blocking capacity. Bear in mind that many of these categories won't affect your use of the tarp while in the field to any great degree, but they will improve its longevity.

SIMPLE SHELTERS

The first use of a tarp that comes to mind for most outdoorspeople is as a simple shelter. At the very least, you can throw it over yourself and your gear during a sudden rainfall and you'll be dry and protected until it passes. From there, if you need to set up

Add poles to increase height.

SEA TO SUMMIT
NYLON
TARP PONCHO
LIGHTWEIGHT PONCHO AND SHELTER
137 x 253cm
54 x 100in
400g | 14oz
70 D
FABRIC
A small roll like this will fit in most packs.

a short-term shelter, you can run cordage between two trees, throw the tarp over it, add some well-placed rocks to hold down the sides, and you'll have an A-frame tarp shelter. This will protect you for a few days. You can combine two tarps and have one as a ground cover to protect you from the damp earth and a second tarp overhead keeping out the elements.

WATER COLLECTION

This is an excellent way to passively collect water. First, ensure your tarp is waterproof. (Mesh tarps in particular are porous, and although they will repel heavy rains, water will still flow through the material.) To collect water, attach cordage to two adjacent corners of the tarp and secure each end to a separate tree at approximately the same height. Next, attach cordage to the remaining two corners and tie the ends of those cords to two other trees at a lower height than that of the first two. This creates a slope for the water to travel downward. These cords should be tied slightly looser than the first two to create a funnel-like opening at its lowest point. Here is where the water will be directed, so this is where you will place the awaiting catch vessel. The larger the tarp, the more water will be collected, naturally, so be sure to be ready with assorted buckets, pots, canteens or whatever you will use to catch the water. Even though you will be catching pure rainwater, if it sits in the catch vessel for any length of time before you properly secure it, it's highly recommended to filter or purify it before using or consuming it.

SIGNALING

You may not expect to get into trouble during your time in nature's backyard, but it does happen—and a tarp can help get you found. You need to choose a tarp with a color that contrasts against nature's green,

MAKING IT UP

Tarps are available in a wide range of materials with pros and cons.

- **Polyester** Polyester tarps skirt the midway point when it comes to weight, cost, mildew resistance, strength and stretch. However, they fall short when it comes to UV resistance, breathability and long-term use.

- **Canvas** The benefits of canvas tarps include their use of natural materials and their strength. On the downside, they are heavy, difficult to carry and store, and are not the best for keeping dry during downpours.

- **Nylon** Nylon tarps are extremely lightweight, very small when packed, have good strength and are easy to maintain. However, they stretch greatly when wet, are not breathable and are also susceptible to UV damage.

- **Polyethylene** Polyethylene tarps are quite waterproof, very lightweight and generally affordable. Their cons include a lack of breathability, less strength than other types and limited color options.

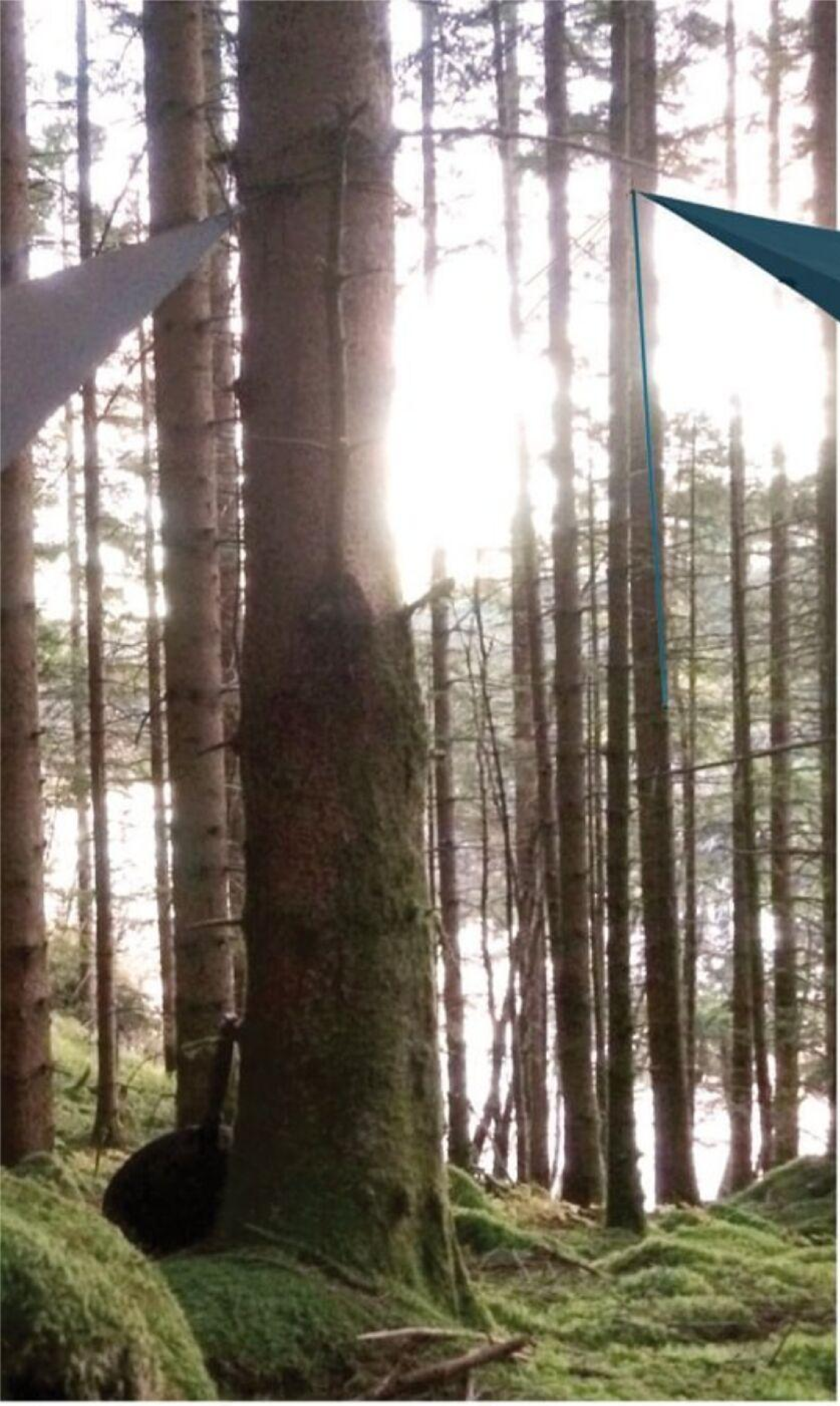
When you're using a tarp to build a shelter, you can create numerous configurations to suit your needs.

brown, tan and gray backdrop, so go with bright orange, red or bright yellow. Some tarps have a different color on each side. Just using the tarp as a shelter, in the open, will alert others to your location. Additionally, you can cut pieces of your brightly colored tarp to make signal flags to wave when planes or helicopters are overhead nearby.

CORDAGE

Not many consider this, but a large tarp can be cut into strips and braided together to create strong cordage. It will have the same resistances to water,

PLAY AROUND WITH DIFFERENT CONFIGURATIONS TO SEE WHICH ONES ARE THE MOST USEFUL FOR YOUR NEEDS WHEN YOU'RE OUT AND ABOUT.



This would work well to provide shade on a hot day.

GOOD CORDAGE IS NECESSARY AS WELL, SO DON'T FORGET TO PACK PLENTY!

mold and UV light as the tarp itself, so it will stand up superbly to the outdoor elements. Tarps made from vinyl and canvas won't stretch to any great degree, which makes them ideal for securing hammocks (which can be made from the remainder of the tarp), for use as shelter bindings, or to secure and carry your loose gear (within a bag created by your excess tarp material).

CAMOUFLAGE

Just like a brightly colored tarp can aid in you being seen by others, a tarp with a green or brown color—or even in a full camouflage print—can keep you and your gear well hidden. During survival or emergency times, people may be desperate and want to steal what they don't have, so you need to be prepared to hide your valuables. A quick covering with a tarp that matches the landscape colors around you can do the trick. Additionally, a shelter assembled with a camouflage tarp (and dressed up with branches and brush) can keep you hidden from others for a great length of time.

LIMITED DRAWBACKS

While it's true that the advantage of using a tarp for survival purposes far outweigh the disadvantages, the negatives must be noted. As mentioned, the weight and bulk of a very good tarp may seriously affect your overall pack weight. The security that a tarp offers is very limited compared to an enclosed tent. Finally, without prior practice, securing a tarp with cordage in the field may take longer than expected, and when time is of the essence, this can be a detriment.

There's no denying that a tarp is a multitool in disguise. Despite its deceptively simple appearance, a tarp can be a legitimate lifesaver in a number of survival scenarios—provided, of course, that you remember to bring it along with you. With a bit of research and some trial and error, you'll be able to choose the tarp that's best for you. The tarp is a must-have for all bug-out bags or emergency kits, and with it you'll be covered in many more ways than one.

Michael D'Angona is a freelance writer, author, martial artist and survival skill practitioner. He has published hundreds of articles encompassing such topics as self-defense, preparedness and outdoor skills. He currently offers magazine writing services and instructional videos at mjd-writersresourc.wixsite.com/my-site.

SURVIVOR FILTER

H2O HAULERS

Vessels to hold and transport your most precious natural resource

BY MICHAEL D'ANGONA

Hydration is a primary survival need, so make sure to prepare for it.

WATER IS YOUR MOST VALUABLE RESOURCE. YOUR BODY IS ROUGHLY TWO-THIRDS WATER. GO WITHOUT IT FOR MORE THAN A FEW DAYS AND YOU CAN SAY GOODBYE TO THIS WORLD.

Because of this, anyone spending time away from accessible drinking water needs to carry their own supply or find a source out in the field and purify it. The simple answer is to use a water carrier. These come in a variety of sizes, styles and functions. Some are relatively inexpensive and simple in design, while others are multiuse, high-end vessels that can offer features other than just holding your life-sustaining liquid as you travel.

This guide will give you an overview of available water carriers, the pros and cons of each style, as well as the best ones to meet both your survival and personal needs.

WHY THE NEED?

Though not at the top of most people's

survival or emergency supply lists, a vessel to carry water is an absolute necessity for use when you can't rely on traditional sources for on-the-go hydration. These carriers can be used to collect and transport untreated water—possibly from a pond or lake to your fire for purification—or they could be used to hold your already purified water for you to drink on your journey. Either way, it is essential to have, and lacking a carry option will only add more trouble to your situation.

SIMPLE AND INEXPENSIVE

Hands down, the most inexpensive and no-frills of the water carrier category are water bags. They are exactly what their name states: bags that can hold water. These are much more durable than over-the-counter zip-close bags but appear very similar. They offer a leakproof design (some may state this, but fail, so be sure to test your chosen bag before venturing out) with a top that seals tight, usually with an adhesive strip. These are great to use when you need a disposable option that adds virtually no weight to your pack. Also, when empty, they take up minimal space so you can carry dozens into the field without any weight issues.

Traditional canteen

Bota bag

Coghlan's
Bota Bag
Outre bota
2 L / 68 oz.

Water pouch

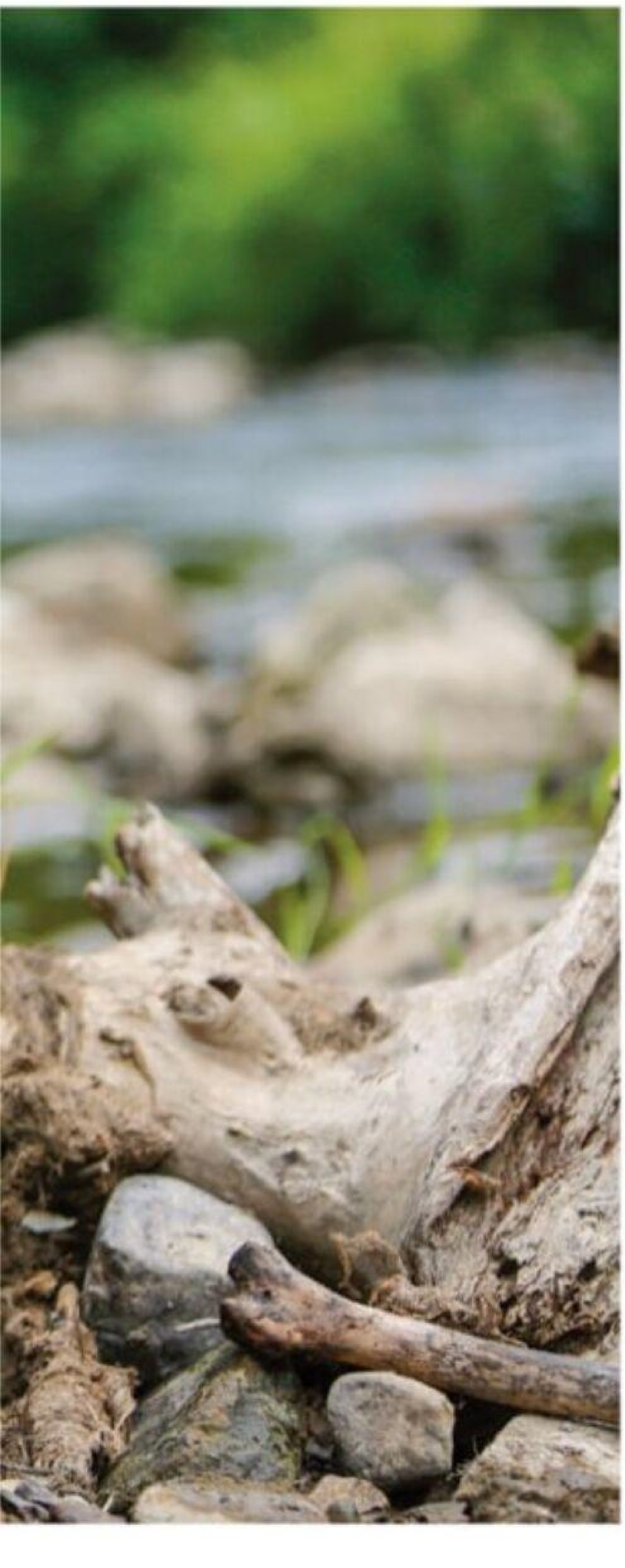
EMERGENCY DRINKING WATER
DATREX
TEAR

GRAYL water filter

The combination of a collection pouch and water purification filters can create a large supply of drinkable water in a small footprint.

SURVIVOR FILTER

Moving up from bags are collapsible water jugs. These allow for greater storage of water and they are reusable. These jugs also store flat when not in use, so space and weight are again minimal. Most are created from food-grade material, and be sure to look for units that are free of BPA, PVC and DEHP. When shopping for a collapsible jug, there are some minor features to look for to get the best ones for your outing. First, make sure they will stand on their own when filled. A jug with a flat base means you can store them and add liquids more easily. A flat base helps prevent repetitive falls, which may affect the integrity of the vessel. Second, a large mouth makes adding or pouring out water faster (with fewer spills, too). Finally, it should have a sturdy handle. These jugs can hold from 1 gallon to nearly 3 gallons, depending upon the size you choose, so an uncomfortable and fragile handle can make your water carrying difficult and awkward.



A bulk container like this is great for use at home or in camp, but they aren't fun to transport when full.

PERSONAL WATER VESSELS

If you're one person out in the wild and need to travel light, then a single travel container is the way to go. There are two basic types of personal water carriers: those that just securely hold water, purified or not, and those that purify water as you either pour or drink directly from the vessel. A canteen, which most people know as being associated with military usage, dates back as far as 60,000 years and was used by humans during the Middle Stone Age. This water carrier has changed in material and overall appearance, but is still a viable addition to your gear ensemble today. A bota bag is a Spanish-inspired carrier

SAWYER
S3
SAWYER SELECT PURIFIER
400
TASTE & ODOR
BACTERIA
PROTOZOA
CHEMICALS
PESTICIDES
+ VIRUSES
+ HEAVY METALS
MICRO SQUEEZE FILTER
SAWYER.COM
SAWYER.COM/SELECT
S3

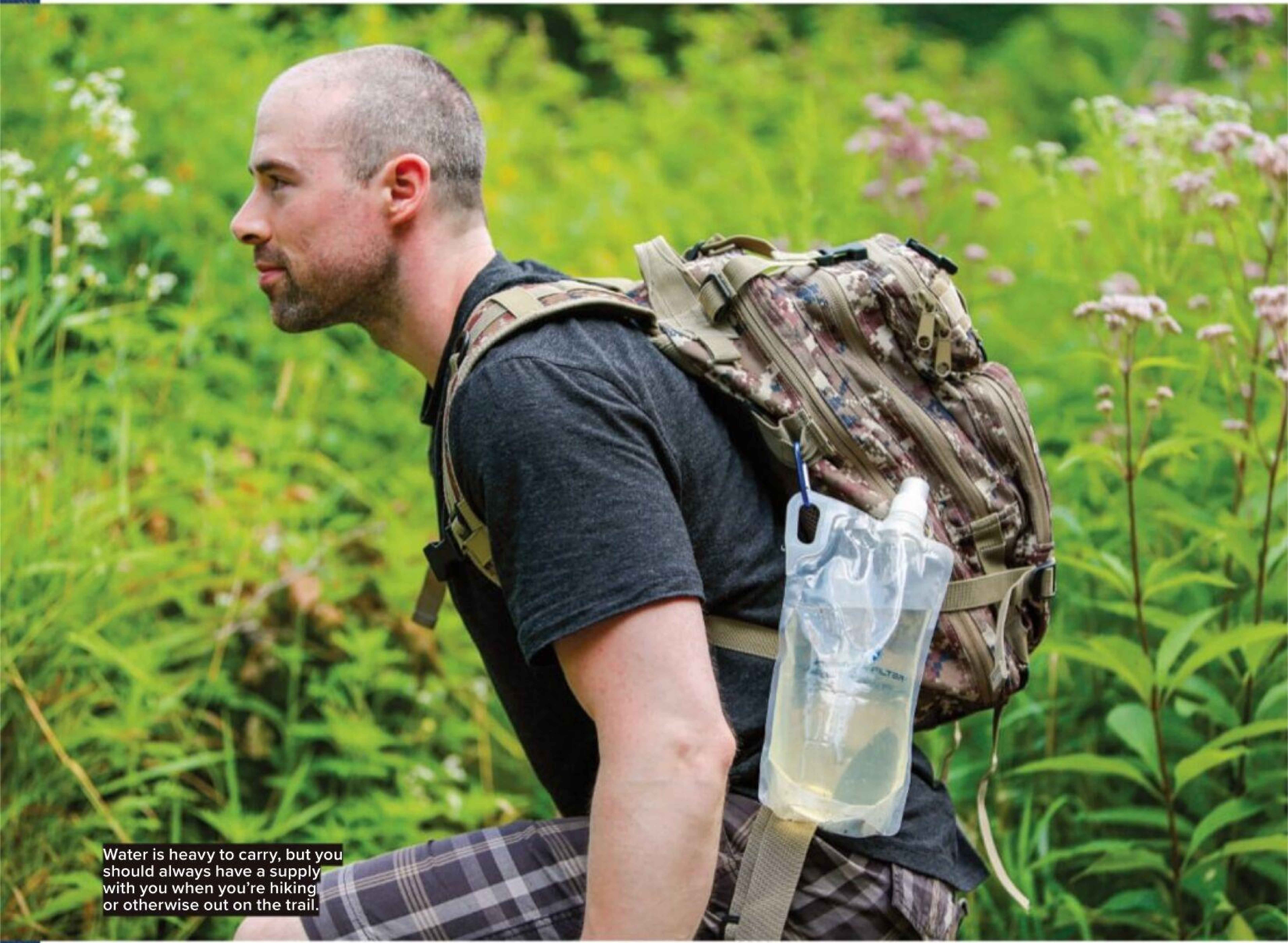
Sawyer water filter

that was primarily used to hold wine and was traditionally crafted from goatskin and leather. It is still used today and can be found in the outdoor supply aisles of department stores and online. However, they are now made from more modern materials, with polyester or latex used for the interior lining, and leather (like traditional bota bags) or synthetic material used for the outer shell.

WATER IS IMPORTANT ENOUGH THAT YOU'LL WANT TO MAKE ROOM TO CARRY AS MUCH AS YOU CAN, AS WELL AS THE MEANS TO FILTER OR PURIFY MORE.

A modern option is the almost endless variety of water bottles available nearly everywhere. These can run the gamut from cheaply made plastic to boil-proof metal that stands up to the rigors of the outdoors. Like almost anything that you buy, you get what you pay for. A cheaply made bottle won't last in the long term and you will be replacing it often, while a heavy-duty bottle will last season after season. It just comes down to your personal wants.

The next step up from a single-function water bottle carrier is a water



Water is heavy to carry, but you should always have a supply with you when you're hiking or otherwise out on the trail.

purification bottle. This unit will let you fill it with questionable water from a stagnant lake or pond—or even a puddle—and when you squirt it into your mouth, it will be fully purified through its filtering system. There is one catch, though: Not all bottles have the same filtering limits. Some may filter out particles and some bacteria, while others will rid your water of all that plus viruses, molds, hard metals and more. Do your research when you buy and get the best filtering protection that's right for you. Additionally, the greater amount of purification, the greater the cost of the bottle, so you'll need to keep your budget firmly in mind. Purification bottles, naturally, require filters. On the packaging will be a rough estimate of how much water it will purify before you'll need to change the filters. It's wise to stock up on replacement filters when you make your initial purchase, so you're prepared for use for years to come.

LONG-TERM-USE ITEMS

It may seem like an oxymoron that you can have long-term water storage units that can also be carried and transported if needed. This circumstance could arise if your primary residence or bug-out location is compromised and a move is unavoidable. These come in the form of water bricks and stackable water jugs. They are available in various sizes, but if you want to be able to easily move or transport them, it's best to choose smaller sizes and just buy more of them. Keep in mind that a gallon of water weighs 8.34 pounds, so it's recommended to keep the sizes down to 3 or 4 gallons for easy transport. Many of these brick-style water containers interlock with one another to save valuable space and offer stability to the containers as a whole. They also can be configured in many ways to conform to compact closets, garages or other spaces where a full-size barrel or storage tank wouldn't easily fit. Many of these carriers also come with sturdy handles, which makes them easy to carry.

With water being our most-needed resource (other than oxygen), it should go without saying that having it nearby is an absolute must. The carriers mentioned here all have their pros and cons. No matter which you choose, it will be one of the most beneficial purchases you make. This is especially true when thirst comes your way, but the world around you is nothing but dry.

NATURAL MATERIALS CAN WORK AS FILTERS, BUT THEY WON'T STOP EVERYTHING!

Coconut shells

NATURAL CARRIERS

If you find yourself without a method to carry water when you're deep in the outdoors, there are alternatives that nature can provide. Below are five carriers that can aid you in a pinch.

- **Moss** Some mosses, like sphagnum moss, can absorb an incredible amount of water (nearly 25 times its own weight), so in a pinch you can grab a large piece, carry it in a pouch and extract the water for use.

- **Wood** Although it is a time-consuming project, you can create a container from a large, dry log. Using a combination of red-hot coals and a sharp rock or knife for scraping, you can shape your vessel.

- **Bamboo** If you're lucky enough to find large stalks of bamboo, these are natural water vessels. Just cut below the sealed joints and fill with water (these also contain water initially, so it's a win-win).

- **Coconut Shells** In tropical environments, coconut shells make excellent water vessels. Just carve out the coconut inside and fill.

- **Animal Parts** Though unsettling for some, animal parts, such as the stomach, can be "processed" using boiling water and used as water carriers.

TRAIL HACKERS

Beefy blades to clear your path ahead

BY MICHAEL D'ANGONA

Blaze your own trail easily with one of these.

MACHETES ARE FUN, BUT YOU NEED TO BE CAREFUL AND KNOW WHAT'S AROUND YOU!

NATURE IS RELENTLESS WHEN IT COMES TO GROWTH. UNDER OPTIMAL CONDITIONS, ITS TREES, BUSHES, VINES, GRASSES AND OTHER FOLIAGE CAN EXPAND TO INCREDIBLE PROPORTIONS.

While this is advantageous for the wildlife that lives within it, for you it can become a stubborn obstacle on your desired path. But you don't have to tackle it alone. On the market today are the choppers, hackers, slicers and cleavers that can aid in clearing a route through nature's overgrown masses.

From machetes and oversize knives, to multipurpose hatchets and even some tools that are difficult to truly classify, you have numerous options when it comes to whittling nature's dense growth down to a much more manageable size.

CATCHALL

This is one beefy blade, and that's a great asset when facing nature's obstacles. The Catchall is the perfect all-around campsite knife, featuring an easy-to-sharpen high-carbon stainless steel blade, a contoured handle for exceptional control, and the overall durability to stand up to any outdoor environment and come out a sure winner. Its included thermoplastic sheath holds this beast firmly in place during your travels and offers multiple mounting options for quick and easy access.

Specifications

- Blade steel: 8Cr13MoV
- Satin blade finish
- Handle material: glass-reinforced nylon
- Overall length: 10.25 inches
- Weight: 7.5 ounces

MSRP $60
URL *crkt.com*

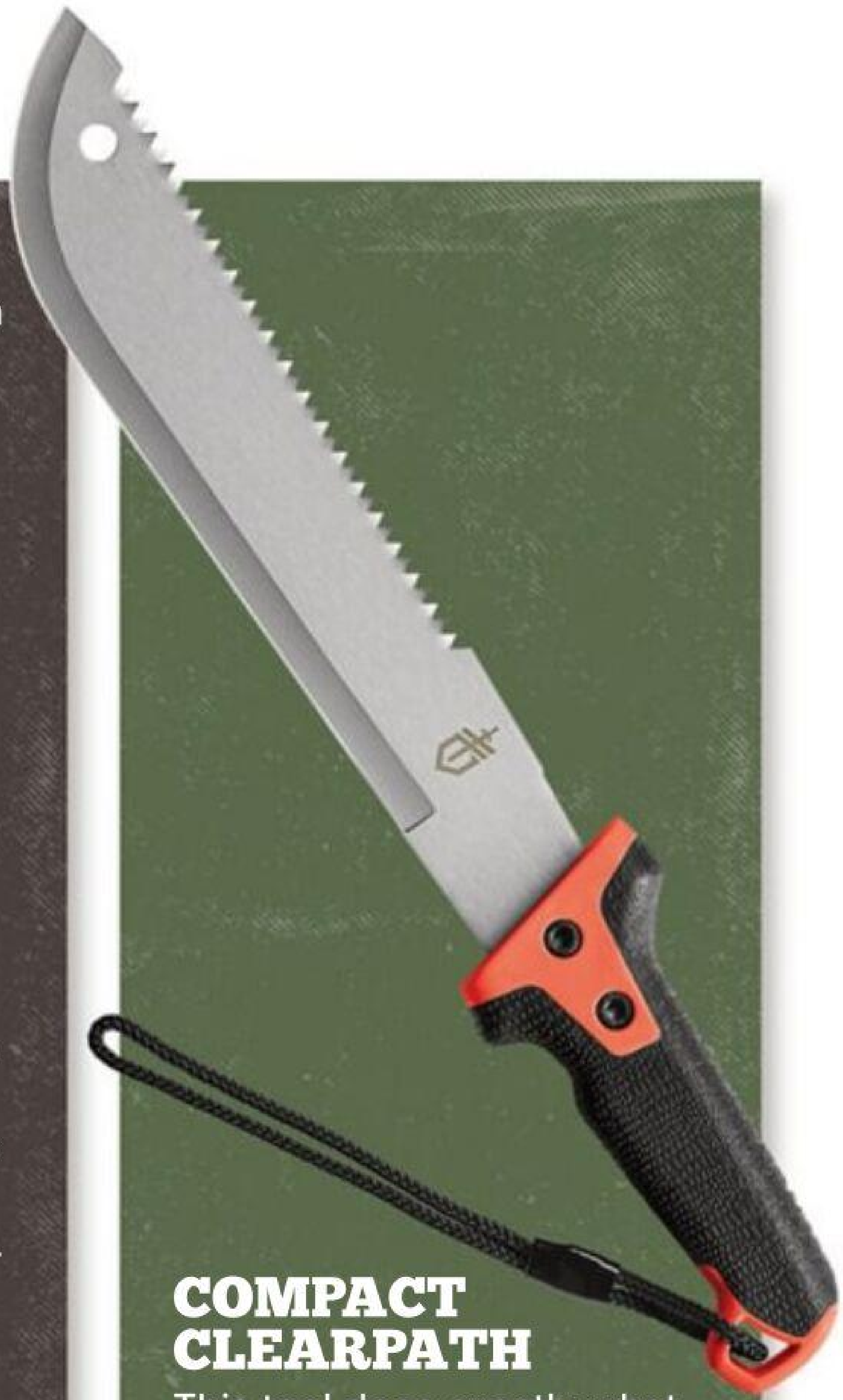
BESTIA

This amalgamation between a kukri-like chopper and TOPS Knives' famous El Chete knife, the Bestia is a true powerhouse when it comes to making short work of anything in your path. It offers over a foot of cutting edge, backed by its hardcore Micarta handle. With every swing, you'll dig deep into large pieces of wood, sever saplings in a flash or demolish small bushes with one fell swoop. For more controlled cuts, just adjust your hand on the two-position handle and you're good to go. An open-backed Kydex sheath with leather dangler attachment is included with this impressive blade.

Specifications

- Blade steel: 1095 RC 56-58
- Handle material: tan canvas/green Micarta
- Includes black Kydex sheath
- Overall length: 19.25 inches
- Weight: 31.5 ounces

MSRP $400
URL *topsknives.com*



COMPACT CLEARPATH

This tool does exactly what its name implies: It clears a path for you. The ClearPath machete offers both a straight-edge blade for vegetation and a crosscut saw edge for handling larger trunks and logs. Its GatorGrip handle allows for less slipping and more cutting, all with minimal user fatigue. The machete also offers a corrosion-resistant blade, a compact, packable sheath, and a safety lanyard for easy tethering.

Specifications

- Blade steel: corrosion-resistant stainless steel
- Handle material: polymer with GatorGrip
- Safety lanyard for easy tethering
- Overall length: 17.3 inches
- Weight: 18.07 ounces

MSRP $35
URL *gerbergear.com*

MACHETE .230

TOPS Knives took the challenge and created a fast and practical machete that tears through natural materials like an absolute boss. It features nearly 16 inches of sharpened 1095 steel, a black linen Micarta handle, wrist lanyard, and the reliability of made-in-the-USA craftsmanship. No matter the terrain or environment, this machete has a proven track record of supreme performance when it counts. The machete includes a custom ballistic nylon sheath complete with two small gear pockets to hold a sharpener, compass, fire-starter or anything else you'd like.

Specifications

- Blade steel: 1095 RC 56-58
- Includes prestrung lanyard
- Black ballistic sheath
- Made in the USA
- Overall length: 22.5 inches
- Weight: 21.8 ounces

MSRP $300
URL *topsknives.com*

CAMP 10

This brutish hacker chops and slashes through whatever stands in your way. Its recurve, top-heavy blade allows for greater power with less fatigue as you clear a trail in front of you. The full-tang construction offers increased durability, while the rubberized handle keeps your grip firmly in place with every strike. The Camp 10 packs a punch and makes clearing brush an absolute pleasure. The knife comes complete with a glass-filled nylon sheath with gear straps and a convenient belt loop.

Specifications

- Blade steel: 65Mn carbon steel construction
- Full-tang design for extra durability
- Rubberized overmold handle
- Included glass-filled nylon sheath
- 10 inches of cutting edge
- Overall length: 16 inches
- Weight: 18.3 ounces

MSRP $70
URL *kershaw.kaiusa.com*

SOGFARI TANTO MACHETE

This compact machete offers the trifecta of performance with its tanto-style tip, its razor-sharp edge and its convenient saw-back feature. This machete sports a durable Kraton handle, textured for a superb and unyielding grip. Use this slasher to clear brush, sever saplings, or saw through logs for your campsite's fire or for shelter material. Take this machete everywhere you go with its included ballistic nylon sheath with a belt loop attachment.

Specifications

- Blade steel: 3Cr13
- Handle material: Kraton
- Ballistic nylon sheath
- Overall length: 16 inches
- Weight: 13.5 ounces

MSRP $33
URL *sogknives.com*

CLEVER GIRL KUKRI

Plowing through tight brush is not a problem when you're holding the Clever Girl Kukri firmly in your hand. This tough-as-nails chopper allows you to take powerful swings with minimal fatigue thanks to its top-heavy design, while its G10 handle ensures nonslip performance. In addition, the Kukri features a protective powder-coat finish, a nearly 8-inch cutting edge, and a thermoplastic sheath for both storage and easy transport.

Specifications

- Blade steel: SK-5
- Black finish powder coat
- Handle material: G10
- Overall length: 13.25 inches
- Weight: 14.2 ounces

MSRP $90
URL *crkt.com*

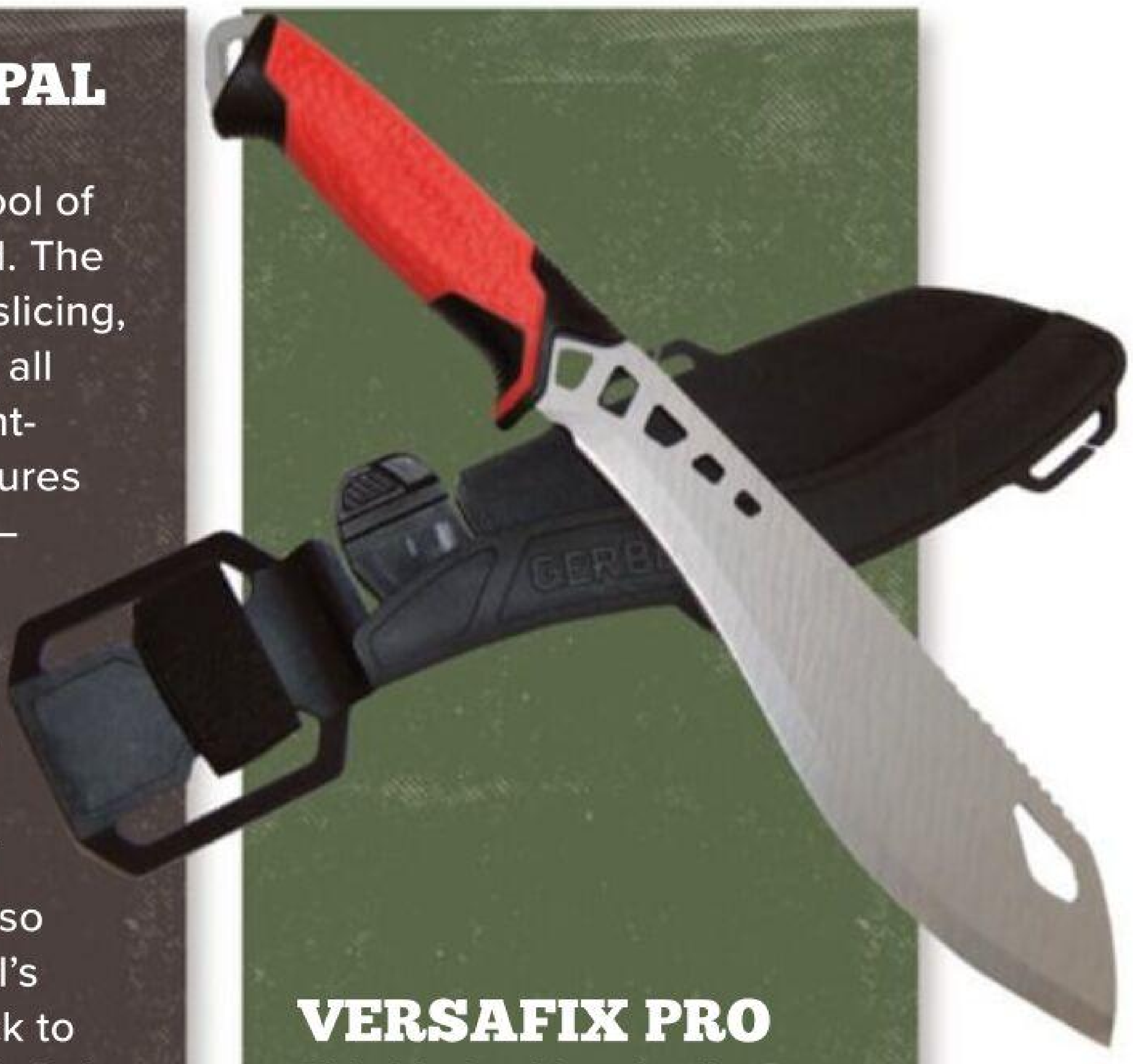
WOODMAN'S PAL

This hacker can be considered the multitool of the trail-clearing world. The versatile blade offers slicing, chopping and sawing, all in one compact, weight-forward design. It features an ergonomic handle—made of either wood or wrapped leather—an included lanyard, and a leather sheath. Additionally, reprints of the original manuals are included so you can relive this tool's rich history dating back to 1941. Every Woodman's Pal is handcrafted by experts and constructed entirely in the USA.

Specifications

- Versatile, multipurpose blade
- Ergonomic handle for less hand strain
- Slices, chops or saws through material
- Includes leather sheath
- Overall length: 17 inches
- Weight: 21 ounces

MSRP $195
URL *woodmanspal.com*



VERSAFIX PRO

This blade skirts the line between being an extra-large knife and a compact machete. It offers a weight-forward, skeletonized blade that rips through most natural materials with ease. The Versafix offers a highly comfortable handle that equates to fewer hot spots and minimal user fatigue and full-tang construction for high durability in the field. It comes complete with a slender multimount sheath with easy-to-use push-tab deployment. A predrilled lanyard hole and overall appealing aesthetics round out this compact chopper.

Specifications

- Blade steel: corrosion-resistant stainless steel
- Full-tang construction
- One-hand sheath operation
- Handle material: red durometer
- Overall length: 14.3 inches
- Weight: 11.2 ounces

MSRP $48
URL *gerbergear.com*

CHANCEINHELL

This machete is all bite as it hacks and slashes through saplings, brush and anything else in your path. Constructed of ultra-durable carbon steel, the Chanceinhell doesn't skimp on the cutting edge, allowing you a full foot of sharpened perfection. The textured and ergonomic handle allows you both a sure grip and a powerful strike with each swing. Excellent corrosion resistance, an easy-to-sharpen blade, and a woven nylon sheath round out this path-clearing staple.

Specifications

- Blade steel: 65Mn carbon steel
- Powder coat blade finish
- Football-textured handle grip
- Overall length: 17.88 inches
- Weight: 20 ounces

MSRP $58
URL *crkt.com*

WITH A FULL FOOT OF CUTTING POWER, NOTHING WILL STAND IN YOUR WAY!

DOUBLEDOWN

The DoubleDown is a unique tool that offers three useful outdoor functions—chopping, cutting and batoning—and performs all three incredibly well. It features an innovative, fold-down design that reduces its carry and storage size in half, all the while making its deployment smooth and safe, thanks to its Quadlock locking system. The knife's large cutting edge, stability bar and baton jimping features make this a go-to tool for any outside excursion.

Specifications

- Blade steel: 420HC steel
- Overstrike guard
- MOLLE or belt-carrying sheath
- Overall length: 15.10 inches
- Weight: 18 ounces

MSRP $170
URL *gerbergear.com*

YACARE 10.0

This compact machete puts power where it counts, whether you're chopping through a jungle or clearing your own backyard. It offers a wide, top-heavy blade for fatigue-free cutting; a thick, well-contoured handle to stay put within your grip; and supreme durability that will last for years. Its nearly 1 foot of cutting edge leaves no path uncleared. The Yacare comes complete with a black ballistic nylon sheath with belt loop and durable lanyard.

Specifications

- Blade steel: 1095 RC 56-58
- Handle material: black canvas Micarta
- Tungsten Cerakote blade finish
- Overall length: 15.5 inches
- Weight: 17.7 ounces

MSRP $320
URL *topsknives.com*

THIS SET WOULD MAKE A GREAT GIFT FOR THE BUDDING OR EXPERIENCED CAMP CHEF!

With this cutlery set, you're able to tackle just about any sort of meal you can imagine.

CULINARY ADVENTURING

The essential camp cook set

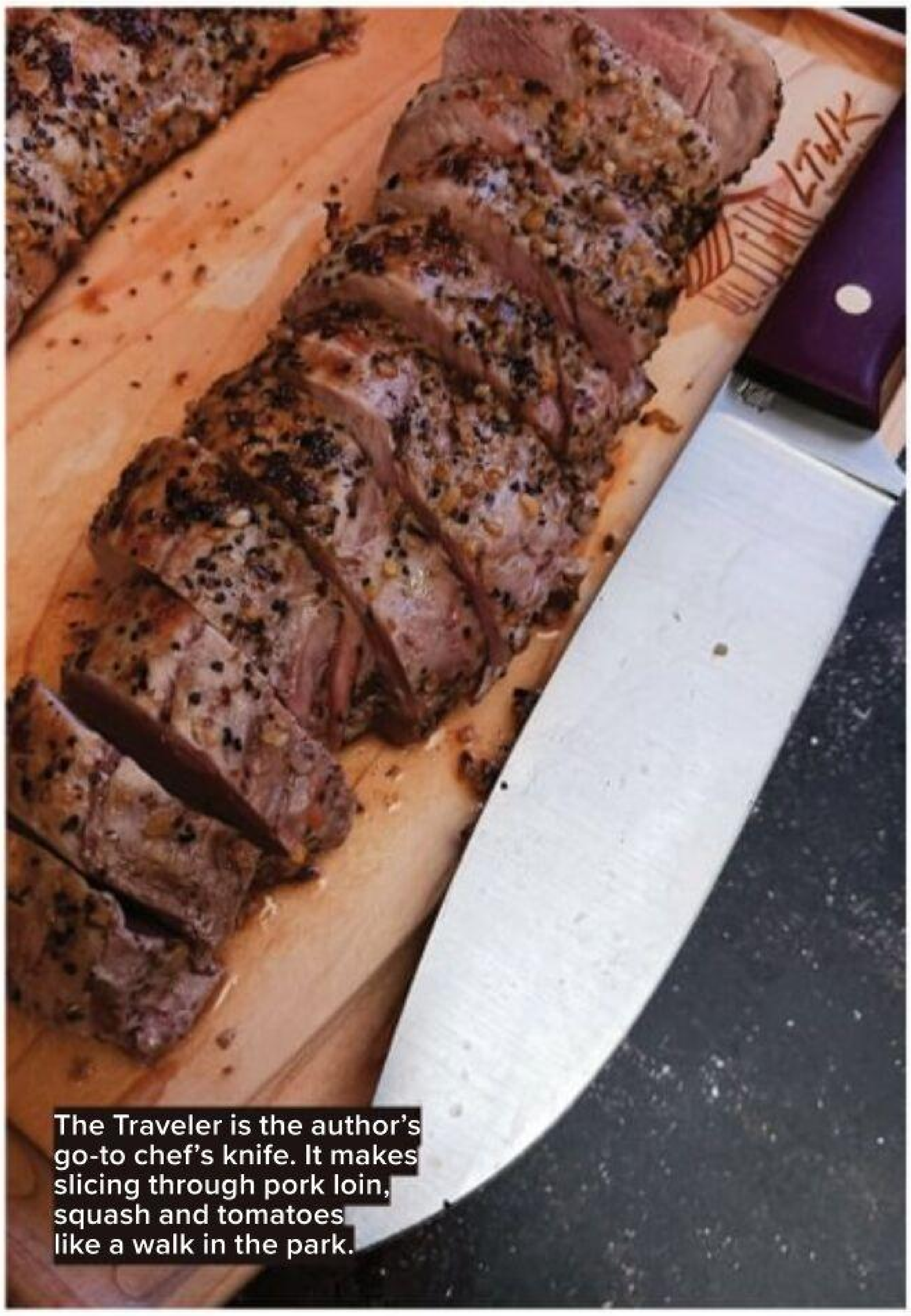
BY REUBEN BOLIEU

IF YOU FANCY CAR CAMPING, WEEKENDS IN A CABIN OR OVERLANDING, THIS IS THE COMPLETE COOK SET FOR YOU. DON'T BE UNDEREQUIPPED WITHOUT GOOD CUTLERY TOOLS JUST BECAUSE YOU'RE AWAY FROM HOME.

	TECH SPECS	TECH SPECS	TECH SPECS	TECH SPECS
	Camp Kitchen	**Traveler**	**Large Pouter**	**Small Pouter**
Overall Length	12"	11"	9"	6 ¾"
Sharpened Edge	7 ½"	5 ¾"	5"	3"
Steel	⅛" (+/-) AEB-L	⅛" (+/-) AEB-L	⅛" (+/-) AEB-L	⅛" (+/-) AEB-L
MSRP	$230	$170	$165	$145

URL ltwrightknives.com

Introducing the Cookcraft Collection from L.T. Wright Knives. It's a set of four remarkable knives designed to excel in your kitchen or by the campfire. It includes the Camp Kitchen, Traveler, Large Pouter, Small Pouter and a cutting board. Each knife boasts Austrian AEB-L high-carbon stainless steel, the same trusty material used for razor blades. With its ability to hold a sharp edge, AEB-L makes field sharpening a breeze while also fending off rust like a pro. All the handle scales feature Redstone Richlite material.


The Traveler is the author's go-to chef's knife. It makes slicing through pork loin, squash and tomatoes like a walk in the park.

This complete set comes in a stylish bag crafted by Blue Ridge Overland Gear (BROG), proudly sewn in the USA. The custom clamshell design features a MOLLE panel on the back, a Velcro panel on the front, and even a pocket for your cutting board. For travel convenience, a removable Kydex knife rack snaps securely into the bag. Plus, the spacious main pouch can easily accommodate your spices or other handy utensils. Need even more room? No problem. You can snag two additional pouches (sold separately) to expand your storage within the BROG bag—happy cooking and camping.

WHAT'S RICHLITE?

Richlite, a robust composite, fuses paper or wood fibers

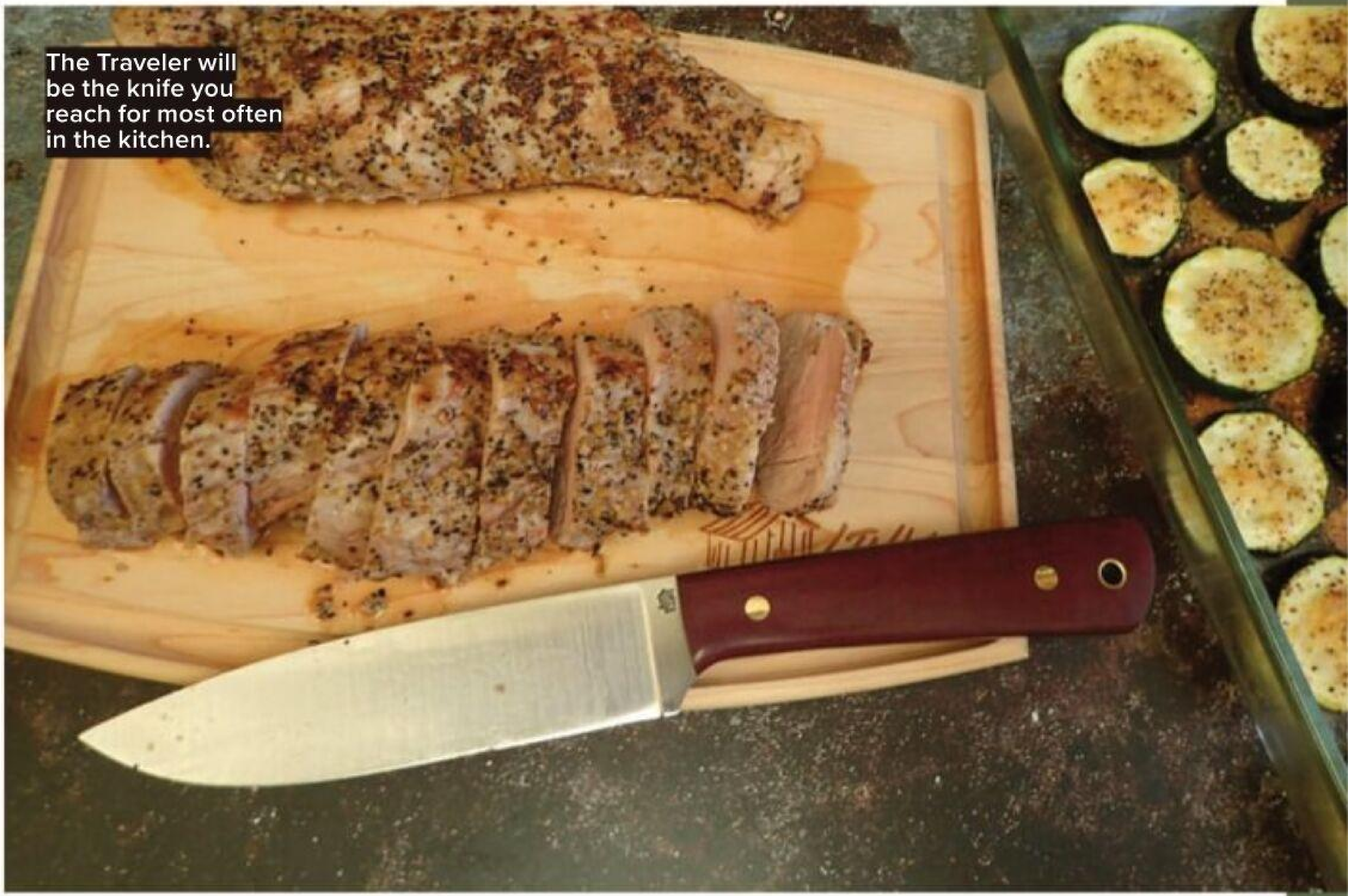
Whipping up Japanese yakisoba was easy for the author, who wielded the Camp Kitchen like a pro with an Asian cleaver.

with phenolic resin under intense heat and pressure. This process creates a durable, water-resistant material ideal for knife handles. Makers choose Richlite for its strength, machinability and sustainable nature. It withstands wear, offers a secure grip and provides a unique aesthetic, making it a reliable choice for demanding applications.

At one point, L.T. Wright used Richlite for the cutting board. However, I ended up with a wooden one instead, complete with the L.T. Wright logo for that charming rustic flair. Who would have guessed I was in for a woodsy surprise?

CAMP KITCHEN

In my book, this knife is a culinary powerhouse, merging the elegance of a large cooking knife with the practicality of an Asian-style cleaver. Measuring a robust 12 inches in total length, it features a 7 ½-inch sharpened edge ready to tackle just about anything you throw at it. Crafted from sturdy ⅛-inch-thick AEB-L steel, it flaunts a flat grind and a polished finish that would make any chef swoon. The handle, made from Redstone Richlite, offers the perfect combination of style and durability—definitely a looker! And let's not overlook the thumb scallops, which provide an extra


The Traveler will be the knife you reach for most often in the kitchen.

> **WHILE A GREAT CHEF CAN MAKE VIRTUALLY ANY KNIVES WORK, THE JOB IS MADE INFINITELY EASIER WHEN THE KNIVES ARE HIGH-QUALITY.**

The Large Pouter and Camp Kitchen knives tackled dinner successfully, boning chicken and slicing potatoes.

This stylish set comes in a nifty bag from Blue Ridge Overland Gear (BROG), proudly made in the USA.

grip for those intense chopping sessions. It's undoubtedly a fantastic companion for any outdoor cooking adventure!

SLICE 'N' DICE

Thanks to my ongoing love affair with cleavers, I find myself reaching for this slicer more than any other. The blade's thin grind easily slices through hard root vegetables like carrots and potatoes. Plus, it's great at scooping up ingredients for a quick transfer, making it an essential tool in my culinary arsenal.

While the Camp Kitchen excels at handling veggies and meat, it's not designed for heavy-duty meat cleaving. Still, I trust L.T. Wright's heat treatment. If you need to tackle meat, just use the spine for a good chop and let the edge handle the finishing touches. This technique is what those nimble Chinese cleavers are famous for among chefs!

TRAVELER

Meet the Traveler knife, a clever twist on your typical kitchen companion. With a design akin to a French trade knife, it fits in perfectly whether you're slicing vegetables on a cutting board or hacking away at a picnic spread.

This impressive tool stretches to an overall length of 11 inches, boasting a razor-sharp edge that's 5 ¾ inches long. Made from sturdy ⅛-inch-thick AEB-L steel, its flat grind ensures top-notch cutting performance, perfect for any culinary adventure. The handle, crafted from Redstone Richlite, features polished scales that bring a dash of sophistication to your slicing game. Who said practicality couldn't be elegant?

The Traveler is my go-to chef's knife. It expertly handles tasks like slicing pork loin, squash, and tomatoes—perfect for everyday kitchen adventures. It transformed into my trusty carver for ham and turkey during the holiday season, swooping in with precision and style for every festive feast.

LARGE POUTER

The Large Pouter is the granddaddy of the Pouter knives, flaunting its curvy design with a swagger. Measuring a handsome 9 inches in total length, it features a razor-sharp 5-inch edge that's ready to tackle any task. Crafted from robust ⅛-inch-thick AEB-L steel, this knife boasts a flat grind, ensuring precision and ease. It is perfect for those who like their cuts clean and their adventures sharp. The handle, made of Redstone Richlite, gleams with a polished finish that adds a touch of style and practicality.

For all you avid hikers and campers out there, this knife doubles as a trusty belt sheath companion—just remember that the "M" sheath is available for an extra $50 if you want to carry it in style!

I turned to my trusty Large Pouter knife to trim fat from chicken and pork for a few meals. With its medium-size blade, it gracefully danced around those tight spots. This trusty blade was my go-to boning knife when it came to chicken quarters, thighs, drumsticks, and even the turkey at Thanksgiving.

SMALL POUTER

The Small Pouter is the feisty little underdog of the knife world! Although it doesn't quite fit the classic definition of a paring knife, it certainly holds its own. This compact beauty measures 6 ¾ inches overall and features a sharp 3-inch edge ideal for culinary adventures. Crafted from durable ⅛-inch-thick AEB-L steel with a flat grind, it's both rugged and efficient. The stylish Redstone Richlite handle has a polished finish like its siblings.

Designed for hikers and campers, the Small Pouter fits perfectly in a belt sheath. For an extra $40, you can choose the "A" sheath to keep the knife ready. This little knife is prepared for any challenge!

WRAP-UP

The L.T. Wright Cookcraft Collection is the ideal companion for car camping, cabin getaways or overlanding adventures (but it's elegant enough for home use, too!). The set includes four versatile knives—all crafted from durable AEB-L high-carbon stainless steel with Redstone Richlite handles—and a cutting board. It offers practical storage solutions, including a removable knife rack, kept safe in a sleek bag from Blue Ridge Overland Gear.

Doing what it does best, Le Fromage made hors d'oeuvres, slicing cheese and grape tomatoes for a quick snack.

LTWK
Handcrafted Knives

LE FROMAGE

Cheese, anyone? This stunning knife isn't part of the Cookcraft Collection. However, it's got a heck of a blade and stands on its own just fine. It's designed to be a cheese slicer, but it does it all.

This knife measures 10 ½ inches overall and has a sharpened edge measuring 5 ¾ inches. It is crafted from ⅛-inch-thick AEB-L steel and has a flat grind for precision. The handle is made from Redstone Richlite, offering a sturdy grip, while the polished finish adds an elegant touch to its overall design.

The Le Fromage effortlessly slices through cheese in your kitchen or shines brightly next to a campfire charcuterie spread. It's made from the same Austrian AEB-L steel as the Cookcraft Collection. Thanks to its high carbon content, you can sharpen it in the field without breaking a sweat and enjoy a little extra rust resistance. So, whether you're serving up a cheese platter or camping under the stars, the Le Fromage has got you covered!

MSRP $190

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